# THE

# DUBLIN QUARTERLY JOURNAL

OF

# MEDICAL SCIENCE.

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Forster & C° Dublin

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OF

# MEDICAL SCIENCE.

FEBRUARY 1, 1869.

## PART I.

## ORIGINAL COMMUNICATIONS.

ART. I.—*Surgical Reports.* By GEORGE H. PORTER, F.R.C.S.I.; President of the Royal College of Surgeons in Ireland; Senior Surgeon Meath Hospital and County of Dublin Infirmary; Surgeon to Simpson's Hospital; President of the Surgical Society of Ireland; Vice-President of the Pathological Society of Dublin.

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I.—*Patient (a Female), aged Forty-five Years—Large Phosphatic Calculus—Lithotrity—Recovery.*

ALTHOUGH not exempt from calculous complaints, the occurrence of stone in the urinary bladder of the female is rare when compared with the male. The short urethra, devoid of natural contractions, but slightly curved, and the absence of a prostate gland at the

neck of the bladder, explain why the surgeon is less frequently called upon to interfere by operative measures to relieve the patient. Nature unaided often expels the foreign body.

In Mr. Coulson's work on " Lithotrity and Lithotomy," published in 1853, he quotes from tables of M. Civiale an important fact, that out of 2,834 patients operated on in France 2,711 were males, 123 females, or one in twenty-two.

In the first place, then, the rarity of the disease, and secondly, from its possessing some features of a practical character, I am induced to record the following case:—

J. L., aged forty-five years, married, was sent to me by my friend, Dr. Evory Kennedy, and admitted into the Meath Hospital, December 24th, 1867.

*History.*—She had suffered from constant irritability of the bladder and rectum for a year and nine months previously. She had consulted a medical practitioner, and he, looking upon the case as one of uterine disease, treated her accordingly for several months; but not having obtained any permanent relief of the distressing symptoms, she was sent by a lady, who took a great interest in her, to Dr. Kennedy. He carefully investigated her condition, and being satisfied that no disease of the womb was present, sounded her bladder, and for the first time detected a large calculus, and thus arrived at the source of her suffering. Even before he introduced an instrument he discovered the presence of the stone by a vaginal examination.

He had an analysis of the patient's urine made by Dr. Wm. D. Moore, whose experience is well known to the profession, and the following was the result:—

" The urine is exceedingly turbid, highly albuminous, strongly alkaline, free from sugar, and contains but little urea. Its specific gravity is 1.015. On standing it deposits an enormous amount of ropy pus entangling numerous blood corpuscles and crystals of triple phosphate, some epithelium and earthy phosphate. Vibriones also, not in motion, are seen under the microscope."

Dr. Kennedy kindly placed the woman under my care in the Meath Hospital.

*Symptoms on Admission.*—She looked worn, and depressed in spirits, although possessed of the frame of a fine looking person of her age. She complained of constant and severe bearing down pain at the anus, and frequent desire to pass water. Her urine

was scanty, high coloured, turbid, and tinged with blood, at times resembling port wine and water. Occasionally she was unable to retain it, and it dribbled away. She was also troubled with a dull pain in her back which frequently shot down her thighs. Her sleep was almost gone, and when she had any it was unrefreshing and disturbed. There was no sudden stoppage of the stream during micturition, but the pain on emptying the bladder was excruciating. She had not ceased to menstruate, and described her sufferings at that period as greatly aggravated.

December 26th, 1867.—I sounded for, caught, and measured the stone with Sir H. Thompson's flat-bladed lithotrite, which was introduced with ease, her urethra being large. The diameter in which I seized it measured one inch and a quarter. The instrument on striking the calculus gave the sensation of its not being hard, but that well known ring on coming in contact with a phosphatic stone. She suffered but little from the examination. I placed a quarter grain morphine suppository in her rectum, and ordered that she should have plenty of oatmeal tea to drink, and at night one drachm of camphorated tincture of opium in a wine glassful of the oatmeal tea.

December 27th.—The first sitting was performed, assisted by my colleagues, and in the presence of Dr. Kennedy, who kindly accepted my invitation to the operation. As the introduction of the lithotrite on the former occasion gave so little inconvenience, I did not deem it necessary to administer chloroform. She was placed in the position for lithotrity on a firm table, in the operating theatre, with folded blankets under her pelvis, and held by my assistants. I injected about four ounces of tepid water into the bladder, but it was immediately expelled. I then introduced the flat-bladed lithotrite, warmed in hot water, and well oiled (from the sounding and measurement I was certain this instrument was powerful enough to deal with the stone), and having felt the calculus, I opened the blades almost to the fullest extent, without difficulty caught it, and screwed home the instrument, which easily crushed it with an audible crack. Five times I opened the lithotrite, seized fragments and shattered them, and then ceased, as two minutes had been occupied, and the patient seemed tired. Twenty-three grains of detritus were brought away in the jaws, and eighteen grains more were washed out by means of Clover's syringe, which I used immediately after withdrawing the lithotrite. Five o'clock p.m., the same evening, she was free

from pain, her urine was but slightly tinged with blood, and twenty-seven grains of *debris* had passed since the operation. Ordered to have a glass of champagne, and a morphine suppository to be introduced at bed-time.

December 28th.—She had passed a good night, although micturition had been frequent. Her urine had now become clear, and forty-one grains of detritus had been expelled up to six o'clock, a.m. A vaginal examination permitted a number of broken fragments to be felt in the bladder. Ordered chicken for dinner, and four ounces of wine.

December 29th.—She had slept well, as the calls to make water had not been at all so pressing. Twenty-nine grains of fragments had been washed out by the flow of urine. She could turn freely on either side, which she had not been able to do for months previously without pain, and described her state as greatly improved in every respect.

December 31st.—The second sitting took place; four fragments of considerable dimensions were caught in the flat-bladed lithotrite, and crushed. Twenty-eight grains of detritus were removed in the instrument and by means of washing out with Clover's apparatus.

January 1st, 1868.—She had a most comfortable night, having been disturbed only three times; thirty-eight grains of detritus got rid of.

January 2nd—She had passed water only twice during the night; eleven grains of stone expelled.

January 3rd.—She was allowed to sit up for three hours. Seven large pieces of calculus passed away; their aggregate weight was 155 grains; one of them contained the nucleus of the stone.

January 6th.—She was up all day, and walking about the ward; she suffered no pain whatever, nor had she any difficulty in retaining her urine. No detritus passed.

January 8th.—A single fragment, weighing twenty-two grains, came away.

January 11th.—The third sitting took place. Two fragments were seized, and broken; five grains of crushed calculus were removed in the lithotrite.

January 12th.—She passed a good night. Forty-three grains of detritus expelled.

January 14th.—I sounded her bladder and felt a small fragment, but did not succeed in catching it.

January 20th.—The fourth and last sitting.  I caught a frag-ment in the lithotrite, and extracted it without crushing; it weighed twenty-seven grains.

After this sitting she never felt the slightest inconvenience, all irritability of the bladder ceased, and she expressed herself perfectly well.

I had a small portion of the stone analysed by Dr. Moore, and the following was the result:—

The calculus consists of a mixture of triple phosphate and phos-phate of lime, but not in the proportion to form the " fusible calculus."

The patient left the hospital on January 25th, quite well.

This case points out the instructive lesson, how easily a prac-titioner may be led astray, and confound a case of stone in the female bladder for disease of the womb.  Holmes, in his *System of Surgery*, alludes to this error.  In Vol. iv., page 476, when describing the symptoms of stone in the female bladder, he says:— " The symptoms often simulate those of uterine disease, for which they are not unfrequently mistaken; so that the surgeon should be on his guard, and on failure of detecting uterine mischief, he is bound to pay special attention to the bladder and rectum."

It is also an example of a large stone in the female urinary bladder removed by crushing, and thereby saving the patient from the unhappy consequences of incontinence of urine, resulting from forcible dilatation of the urethra, or vesico-vaginal fistula, if removed by incision through the wall of the vagina.  The stone was dis-integrated by the lithotrite, and washed out by the stream of urine, aided occasionally by the use of Clover's syringe.  It has been recommended by some to use a shorter instrument with the female, but I cannot too strongly express my admiration of Sir H. Thompson's lithotrites, they are so easily manipulated, and at the same time so powerful, that they leave nothing to be desired.  The debris of the calculus removed from this woman weighed one ounce two drachms and fifteen grains.  I have frequently heard from her since, and she is in the enjoyment of perfect health.

II. — *Patient aged  Forty  Years — Small  Lithate  Calculus — Lithotrity—Recovery.*

I have selected the following case from my note book, as it possesses some remarkable features :—

Mr. B., aged forty years, was placed under my care on the 9th

June, 1868, by my friend Mr. Smyly, he being obliged to leave town the following day for a tour on the Continent.

*History.*—Thirteen years previously he had suffered from symptoms of renal calculus. His urine was generally of a dark colour, and at times contained flakes of mucous, with small clots of blood.

June 27th, 1865.—During micturition the stream suddenly stopped, and the patient experienced a dreadful cutting pain in the neck of his bladder. After a few moments the water again commenced to flow, but in a much diminished stream, and highly stained with blood. Prior to this date he was not sensible of any foreign body in his bladder. For some days after the viscus could not tolerate the presence of more than a few drops of urine without causing a desire to void it, and that effort always gave rise to great pain.

He gradually got relief, but still the stream occasionally stopped suddenly, and when it came again was greatly lessened in volume and force. He did not seek surgical aid until the autumn of 1864. Mr. Smyly then passed a bougie, and felt a stone just as the instrument entered the bladder. It gave the sensation as if the calculus was fixed, and imbedded in the prostate gland.

In the month of February, 1865, he was again attacked with severe symptoms of stone in the left kidney, and after suffering much during its passage through the ureter to his bladder he expelled it during micturition. He did not again obtain advice until February, 1868, when he placed himself under the care of Mr. Smyly. He detected the calculus as before lying at the entrance of the prostate, and firmly lodged in its position. Having dilated the urethra by the use of bougies, gradually increased in size, Mr. Smyly made a careful examination with the endoscope, and observed what appeared to be a calculus imbedded in a mass of granulations. He continued the introduction of a large-sized bougie twice or thrice a week. This, by its pressure, caused the stone to become more and more exposed, where it lay beneath, and to the left side of the internal orifice of the urethra.

The patient was in the habit of occasionally introducing a bougie himself, and often felt the stone. Being very ingenious, he constructed instruments by which he hoped to extract, or, at least, to dislodge the foreign body from its situation.

June 9th, 1868.—I sounded him with Sir Henry Thompson's flat-bladed lithotrite. I distinctly felt the stone as the instrument

entered the bladder, but could not detect it whilst exploring the cavity of the viscus. On withdrawing the lithotrite I found its polished shaft scratched at the point, where it rotated on the stone, and subsequently, as I withdrew the instrument, I felt it.

I did not again introduce the lithotrite until July 1st, when I received intelligence from my patient that he had succeeded by means of a contrivance of his own in pushing back the calculus into the cavity of the bladder, and that he felt it in quite a different locality. He had the day previously constructed an instrument out of a piece of wire, the end of which he turned into a loop. By means of this he entangled the stone, and aided by passing a finger of his left hand into the rectum he forced the calculus from the site in which it had been impacted.

I placed him in position for lithotrity (he would not have chloroform administered), and introduced Sir Henry Thompson's flat-bladed lithotrite, and immediately discovered that his conjecture was perfectly correct. I felt the stone lying at the bottom of the bladder. I opened the blades, gently turned them down to the right side, and seized the calculus, which measured, in the diameter caught, half an inch. I screwed home the blades, and crushed it. I opened the instrument three times to seek for fragments, but without success. I then withdrew it, and carried out in its jaws three grains of detritus. I placed a quarter grain morphine suppository in his rectum, and desired him to remain in bed and drink freely of oatmeal tea.

July 2nd.—He had passed a good night. Nine grains of detritus escaped with the urine. At four o'clock, a.m., a large fragment became arrested at the orifice of the urethra, and at my visit I removed this by means of Weiss' urethra lithotrite, as I found it impossible to extract it entire. It weighed ten grains.

July 3rd.—He had a good night's rest, but a piece which weighed two grains became arrested in the urethra about three inches behind the orifice. I removed it by gently passing the female blade of the instrument beyond the fragment, and then pushed the male blade down on it, which, having seized, I withdrew it slowly in the little jaws of the instrument. He suffered but slight inconvenience from the operation, and expressed that he had been much relieved.

July 5th.—I sounded my patient, and could not discover any trace of the calculus in his bladder. I injected his bladder, and washed it out with Clover's syringe; not the smallest trace of

detritus could be discovered.    From this date he lost all symptoms of his complaint, and is at present in the enjoyment of perfect health.

The feature of interest in this case was the great length of time the stone remained impacted without increasing in dimensions.    I can, from my experience, speak highly of the advantage in many cases of sounding with the flat-bladed lithotrite of Sir H. Thompson. It may be rotated in the bladder as easily as a sound, and should the calculus be found small, it can be shattered at once, without the inconvenience both to patient and surgeon which must take place when two instruments are used at different times.

### III.—*An Artery Compressor suggested for the Treatment of some Surgical Aneurisms.*

Independent of the ligature, various attempts have been made to arrest the current of blood through exposed arteries, and to occlude them rapidly, or by degrees.    Most ingenious appliances have been devised for the purpose, but they have never met with much favour at the hands of practical surgeons.    Yet how painful it is to meet with cases of aneurism in situations where the experience of bold and able men tells that little can be done to save life.    Among those who have endeavoured to close arteries without cutting through their coats may be mentioned Crampton, Percy, Deschamps, L'Estrange, Assalini, Dubois.    If, however, their instruments be scrutinized, I think it will be found that the disturbance to the vessel both in applying and removing them was too great, and the amount of pressure far beyond that required.    In some situations the ligature has invariably failed, secondary hemorrhage following its separation.    To meet such difficulties is my object. That the axillary artery could be compressed between a silver probe and loop of wire for *fifty-two hours* without damaging the vessel, I perfectly satisfied myself.    I reported the case in the number of this Journal for November, 1867.    In the instance I refer to the artery was not occluded, but considerably narrowed at the point of acupressure.    No laceration of either the internal or middle coat took place, nor do I believe such a condition requisite to close a vessel.

Strongly impressed with such an idea, I consider a modification of acupressure may yet be brought to aid the practical surgeon in the cure of aneurisms hitherto unmanageable.    The little instrument I venture to suggest to the profession is in reality a form of acupres-

sure, simple in construction, easy of application, and yet powerful in restraining the current of blood, without rudely inflicting injury on the arterial coats. It consists of a piece of silver wire about the strength of an ordinary probe; this is bent into a triangular shape about four inches in length, and the apex surmounted by a small ring; the base is perforated by two little apertures just large enough to permit a fine wire to pass easily through. The wire is first carried round the denuded artery in an aneurism needle with greater facility than a thick ligature, and each extremity of it passed through the holes in the compressor; one end should be fastened by twisting it through the little ring at the top, and the compressor may then be gently pushed down on the vessel, when, by pulling the free end of the wire, the requisite pressure may be made to arrest the flow of blood through the artery. The lithograph, Plate I., gives an accurate representation of the compressor, and the manner in which the wire is passed through, forming the loop which, with the instrument, encloses the vessel in such a manner that slipping is impossible. When the artery is sufficiently occluded to stop the current, the free wire may be fastened also to the ring. The instrument can be removed with the greatest facility when pressure is no longer required, by cutting the wire at each side, lifting up the compressor, and then gently pulling the wire away from beneath the artery. I have placed this instrument on the femoral artery in the dead subject, and it closed the vessel so tightly that it prevented the injection of water through the artery, and the internal coat was not in the slightest degree injured. I have not had an opportunity of testing it in the living, but I suggest it to the notice of my professional brethren, hoping that they may be induced to give it a trial. We know that aneurisms have become consolidated, and cured in a few hours after shutting off the supply of blood to the sac, and should such a happy result follow the use of this instrument, it might at once be removed without having done any injury to the vessel; or if, on the other hand, it had been permitted to remain for fifty or sixty hours without curing the aneurism, it might be taken away, no harm having been done by its presence. It is so light in construction that no inconvenience is likely to be produced whilst in the wound leading to the denuded artery. Its action imitates, as nearly as possible, acupressure, which we know *efficiently* closes the cut extremities of large arteries.

ART. II.—*On the Diagnosis and Treatment of Uterine Polypi.*
By GEORGE H. KIDD, M.D., Fellow of the Royal College of
Surgeons in Ireland; Obstetric Surgeon to the Coombe Lying-in
Hospital, Dublin.

UTERINE polypi are found either within the uterus, or partly
within and partly without, or completely without, growing from
the vaginal portion of the cervix.    In the following observations I
propose to refer chiefly to the diagnosis and treatment of those
found in the first of these situations, that is, of polypi growing
from the inner surface of the uterus, and still retained within its
cavity, but as there are many features in the histories of some of
the uterine polypi in other situations that have come before me,
which illustrate important points of both diagnosis and treatment,
I shall also relate some of these cases as I proceed.

Intra-uterine polypi may grow in any of the regions of the uterus
into which anatomists are in the habit of dividing that organ, that
is from the fundus, the body, or the cervix; as they enlarge they
may gradually pass downwards till they escape through the os and
come to lie in the vagina or even protrude through the vulva; or
they may give rise to a train of symptoms involving the comfort,
health, and even life of the patient before they pass out of the
region within which they had their origin.    They commence either
in the mucous membrane or in the uterine substance itself, especially
in its connective or submucous tissue.    Of those which spring from
the mucous membrane three varieties are met with, of each of which
examples will be found in the following cases.    Of those that grow in
the uterine tissue authors describe two forms, one of very frequent
occurrence—the fibrous, and the other rare, the muscular—but the
distinction is more of anatomical than practical importance, and we
may safely use the term fibrous to include both.    The truly extra-
uterine polypus, or that which grows from the vaginal portion of the
cervix, also has its origin in the uterine tissue, and is almost always
fibrous, but may also have so much muscular substance in its
structure as to deserve the name of muscular in an anatomical
description.

Hemorrhage is the symptom that first attracts the patient's
attention in cases of polypus, and in no case of persistent and
uncontrollable bleeding, in non-pregnant women, should the
probability of the existence of a polypus in some part of the uterine

canal be forgotten, especially if no other cause for the hemorrhage be apparent. Leucorrhea is another very constant symptom, the discharge having the peculiar character of the cervical leucorrhea of authors—ropy and tenacious, very difficult of removal, resisting even rough rubbing with sponge or cotton, clear and transparent, resembling, as it escapes from the os, the white of an unboiled egg, and often streaked with blood. This symptom exists chiefly with the small cystic polypus that grows in the canal of the cervix, and it is accompanied with a patulous condition of the os. When the polypus is small and still in the cavity of the body of the uterus, the os is generally of the normal size, or may be even less. When the polypus is situated so as to obstruct the exit of fluid from the uterus, it may give rise to excessive pain in menstruation, and expulsive, or bearing down pains may also occur where the uterus is enlarged, either by the retention of fluids in its cavity or by the growth of the tumour, but none of these symptoms, nor yet the reflex irritations that generally accompany them, are sufficient to prove the existence of a polypus. In all cases, however, in which such symptoms, or some of them, are present, and do not yield to treatment, the existence of polypus should be suspected, and a careful physical examination of the uterus be made.

A polypus in the cavity of the body of the uterus causes the whole organ to grow in the same way that the ovum does in early pregnancy. Hence the cavity becomes enlarged and elongated, and the walls thickened and hypertrophied. If the polypus be of any size the fundus of the uterus will be felt in the hypogastric region, of irregular form, it may be, depending on the form of the polypus. When the enlargement is not so great it may still be recognized by the finger in the vagina, and the fundus may be traced by the bi-manual method of Marion Sims, but even though we have hemorrhage and the other symptoms enumerated, along with an elongated uterine cavity as measured with the sound, and an enlarged and irregular fundus, we cannot absolutely declare the existence of a polypus, inasmuch as all these signs, like the symptoms, may depend on other causes.

Moreover, not only may these signs and symptoms exist without there being any polypus present, but we may have a polypus without any enlargement of the uterus, as when it grows in the cervix, and is of the small size usual in this situation, or when, even though in the cavity of the body of the uterus, it is of such small size that the elongation of the cavity, as measured with the sound,

is scarcely appreciable; and yet, small as the growth is, it may, if not removed, run the patient down by hemorrhage.

The only certain proof of the existence of a polypus is the detection of it by the eye or finger, and, therefore, when from persistent hemorrhage or other cause, we suspect the presence of such a growth, and cannot otherwise discover it, we must dilate the uterine canal so as to be able to pass a finger to the very fundus, and make a minute and careful digital examination of the cavity throughout its whole extent.

The use of prepared sponge for the dilatation of narrow passages dates from the earliest ages of surgery, but, till suggested by Sir James Simpson, the exploration of the uterus by its means had not been attempted; and of the many improvements in surgery for which we are indebted to him, this is not the least important. His original paper describing this method was read before the Medico-Chirurgical Society of Edinburgh, in 1844, and in a second paper read before the same society, in 1849, Sir James has shown that till then intra uterine polypi " were generally considered as placed beyond the pale of any certain means of detection, or any possible means of operative removal." Though the dilating of the uterus, to allow of its being explored by the finger, marks the commencement of a new era in uterine surgery, and the principle must ever stand, yet the precise method first adopted is open to many and serious objections, so much so that Dr. Marion Sims, notwithstanding his warm advocacy of their use, states in his " Notes on Uterine Surgery," that he never introduces sponge tents if he can possibly avoid it, and declares that " he who gives us an efficient, pleasant, and cheap substitute for them, will confer a great boon on surgery." These objections have been set forth at length in a paper read by me at the meeting of the British Medical Association in Oxford, and they may be summed up as follows:—

1. Sponge tents become abominably fetid when a few hours in the uterus.

2. By the retention of fetid and offensive discharges in contact with the interior of the uterus, they not unfrequently give rise to metritis of an unhealthy character, and sometimes, by poisoning the blood itself, to fatal pyemia.

3. Repeated and prolonged applications of them are required to get at the cavity of the uterus.

4. They dilate the os externum far beyond what is required, before they open the os internum.

To examine the interior of the uterus, " the persevering use of a series of larger and larger tents for several days" is, according to Sir James Simpson, usually requisite; yet, so much is Marion Sims afraid of metritis, that he does not allow the first tent to remain in the uterus for more than six to eight hours, and if the second tent fail to dilate the cervix sufficiently, he directs us not to persevere further, but to wait a few days and then resort to it again.

Since Dr. Sloan introduced the dried sea-tangle to the notice of the profession it has been very much adopted instead of prepared sponge for surgical purposes; but in uterine cases the same objections apply to it, as it is ordinarily used, as to the prepared sponge, except that it does not become fetid. The persevering use of a series of larger and larger tents, with its accompanying risks, is still required, and the canal is so irregularly dilated that the os internum may not be large enough to admit the point of the finger, when the os externum is much wider than there is any necessity for it to be; but applied in the manner described in the paper referred to, the sea-tangle is free from all these objections, and seems to me not only to supply the boon to surgery desired by Marion Sims, by being an efficient, pleasant, and cheap substitute for sponge tents, but to be more easy of application, more prompt in dilating the uterus, and, above all, more safe in its action.

This method of using sea-tangle tents is shown in the following figure, which represents a uterus containing a number of polypi, and having six tents passed through the os up to the fundus. It is founded on an observation, the correctness of which is easily ascertained—that when the uterine tissues are relaxed by hemorrhage, a fine tent can be passed at once through the whole length of the cervix and on to the fundus, and by a little care a number of fine tents can be packed alongside of one another in the canal, when a single large one, though not nearly of the size of the bundle so formed, could not be passed at all. The first tent introduced serves as a guide to the others, and when they absorb fluid and swell out, they not only dilate the os internum as much as the os externum, but also the cavity of the uterus itself, and thereby provide room for the manipulations necessary for the removal of the polypi, if any are found to exist.

I first used sea-tangle tents in the manner now described in the case of a lady, residing some miles out of Dublin, whom I was asked to see by my hospital colleague, Dr. Sawyer, on the 4th of May, 1867, on account of persistent hemorrhage, when it answered

the purpose so well that I have ever since adopted the same method, and with the most satisfactory results.   In one case, the

Fig. 1.
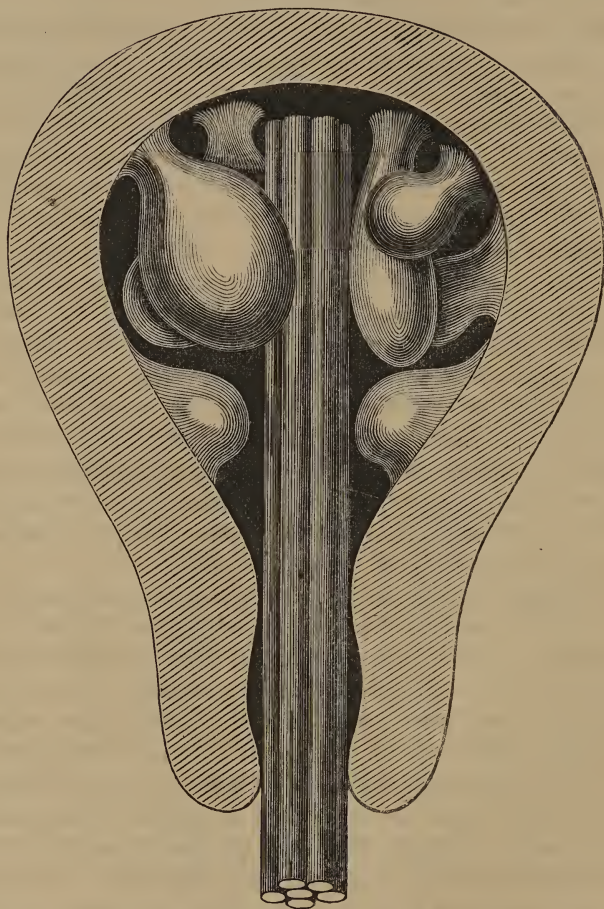


full particulars of which will be found further on, where the patient, though married seven years, had never borne children, the os was so small that it was necessary to leave a single fine tent in it for some time before a sufficient number could be got in to effect a dilatation large enough to admit the finger, but it is the only case I have met with out of a large number where such a proceeding was necessary.

   When it is determined to explore the uterus after this manner

the patient is placed in the usual obstetric position, and the length of the uterine cavity is carefully measured by means of the sound. A No. 5 or 6 sea-tangle bougie is now cut into pieces a little longer than the uterine cavity, and the ends rounded off and smoothed. The patient is now desired to put her left arm behind her back, and to lie almost completely on her face, with her right leg drawn up and thrown in advance of the other—that is, in the semi-prone position of Sims. The "duck-bill" speculum is now introduced and given to an assistant to hold, the anterior lip of the os uteri seized with a fine tenaculum, the os having been brought into view and steadied in this manner, as many of the pieces of sea-tangle as can be got in without using force are passed one after another, till they almost touch but do not press on the fundus. Five or six pieces of a No. 6 bougie will dilate the uterus sufficiently for all purposes; and when these have been got in, the tenaculum and speculum are withdrawn and the patient is settled in bed, when a morphia suppository may be administered. If the uterus make expulsive efforts, it may be well to leave a pledget of cotton in the vagina; but if the tents do not actually touch the fundus the uterus does not generally try to expel them.

At the expiration of twenty-four hours the exploration may be proceeded with. The tents are easily removed by seizing them, one after another, with a toothed forceps. The patient must now be brought fully under the influence of chloroform, and then placed in the semi-prone position as before, when the anterior lip of the uterus must be laid hold of by means of a large strong vulsellum, and slowly and gradually, but steadily, drawn down to the vulva. If the blades of the vulsellum be not strong and firm they will spring at this stage of the operation and tear the uterus, and the instrument must be made so that the points when closed will fairly meet and glide past one another without making fresh openings in the tissues, and when completely closed the blades must have ample space between them for the lip of the uterus, that it may not be in any way compressed, no matter how firmly the handles are held. This stage of the operation is clearly shown in the following figure.

The uterus being brought down and fixed in this way, the vulsellum is given over to an assistant, who is directed to hold it steadily, and the forefinger of the right hand is now passed up into the uterus and its interior carefully examined, which will be much facilitated by placing the left hand over the fundus and pressing

Fig. 2.
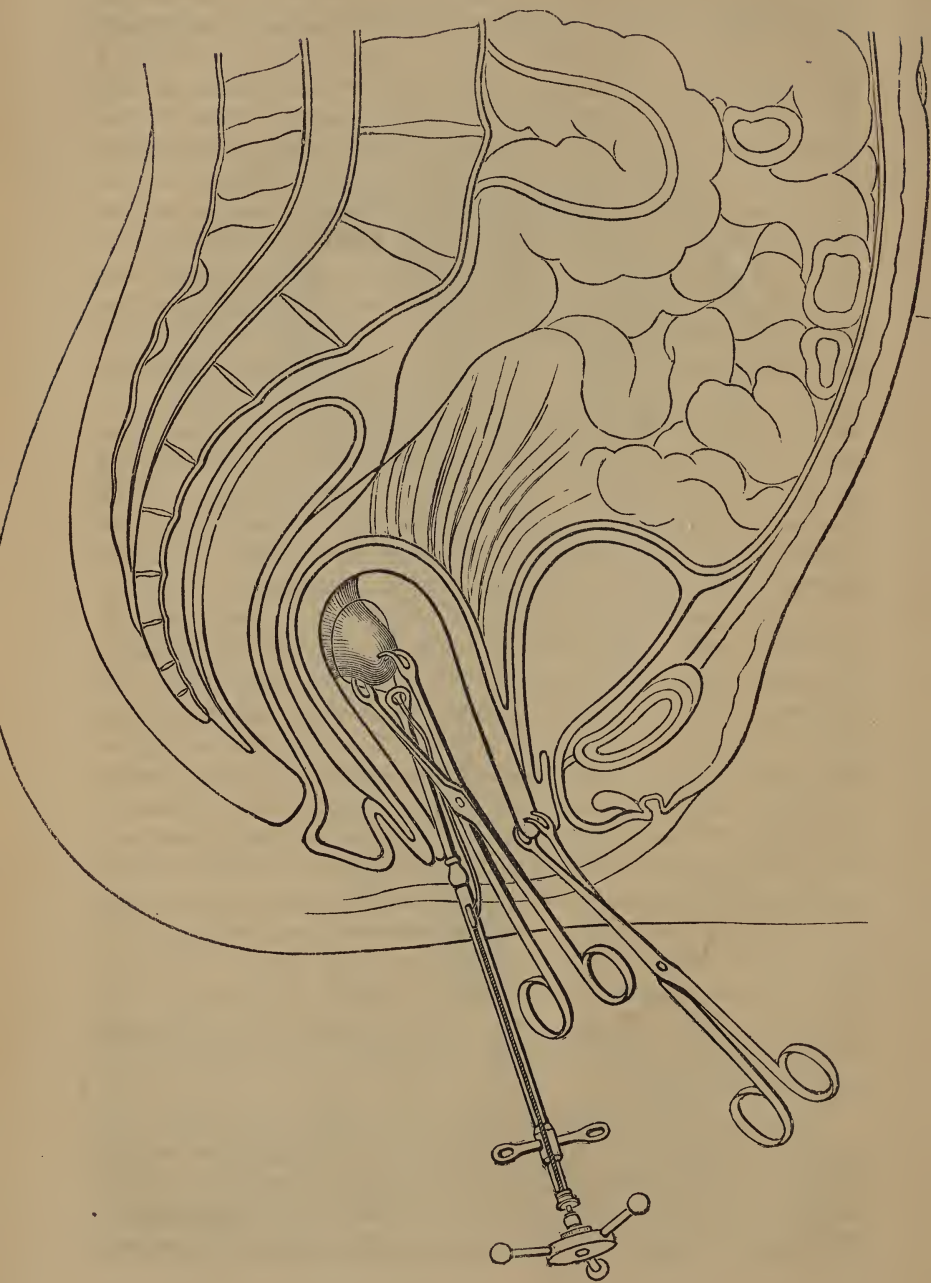
this part down on the finger. If a polypus be discovered a tolerably fine vulsellum is now passed along the finger in the uterus, and guided by it to the tumour, which is then seized. The finger is now withdrawn, and an ecraseur, armed with a single soft iron wire, is passed in, guided by the vulsellum in which the polypus is held. The loop of the wire is first passed over the handle of the vulsellum, and then the point of the ecraseur is placed against the blades of the vulsellum and run up as far as it will go. This stage of the operation is also shown in Fig. 2.

The finger may now again be passed into the uterus so as to press the wire well down on the polypus; but if the eye of the ecraseur be passed well up to the uterine wall it will of itself draw the wire into its place. In the engraving the ecraseur is shown as just about to be pressed up " home " to the root of the polypus. When the ecraseur is fixed in its place it is held steadily, and the wire slowly screwed up till it cut through the peduncle, when ecraseur, polypus, and vulsellum all come away together. The finger should now be again passed in, and if no more tumours be discovered the interior of the uterus may be brushed over with a saturated solution of the perchloride of iron in glycerine, and the patient may be put to bed and allowed to sleep off the effects of the chloroform. For a few days the vagina should be syringed out with tepid water.

I have now operated in many cases by this method, and I have also tried the plan of passing the entire hand into the vagina instead of drawing down the uterus, and also the plan of pressing down the uterus by a hand placed over the hypogastrium without passing the hand into the vagina or using any vulsellum for drawing it down, and am convinced that these methods do more violence to the surrounding parts, are less efficient, and are more irksome to the operator than the proceeding just described. If the polypi be large and come into view, or can be seized, the drawing down of the uterus is, of course, unnecessary; but when they are small and concealed from view, I am convinced the foregoing is the safest way of operating.

### INTRA-UTERINE FIBROUS POLYPI.

Intra-uterine fibrous polypi arise most frequently from the fundus of the uterus, or that portion lying between and above the openings of the Fallopian tubes, but they may also arise from some portion of the walls of the body, and are very rarely met with springing from the

walls of the cavity of the cervix. Arising in any of these situations the polypus commences as a round submucous elevation which in general becomes pedunculated, and suspended with its largest portion free in the distended cavity of the uterus, but it sometimes remains sessile. In either case it may in the progress of its growth come to rest on and close the os internum, forming there a sort of ball valve, and preventing the exit of any fluid that may be poured into the cavity of the uterus, as occurred in Case No. II., where a remarkable train of symptoms arose from this cause. More frequently the tumour passes through the os, and (the peduncle becoming elongated) is gradually extruded from the cavity of the uterus, when it may be found either completely or partly protruded through the os externum, and may be easily recognized and easily removed. Generally speaking, they are single, but not unfrequently we find rudiments of smaller ones, consisting of submucous round elevations adjoining large polypi. Klob,[a] indeed, says that sometimes two are found flattened from contact, but rarely more than two, and in the majority of cases only a single one; and West, contrasting them with fibrous tumours on the outer surface of the uterus, which are seldom solitary, and often very numerous, says,[b] it is rare to find more than one projecting at the same time into the cavity of the uterus. This he thinks due probably to there not being room for more than one tumour at a time within the cavity of the womb, for it is not a very uncommon thing, he says, some months after the removal of one growth, to find another occupying the same situation, producing the same symptoms, and calling once more for a recourse to the same operation. In one of the following cases, however, twenty-nine fibrous polypi were removed within twelve months, at four operations, three at the first, nine at the second, eleven at the third, and six at the fourth. In this respect the case is, so far as I can learn, unique, no similar one having been recorded by any author with whose writings I am acquainted.

Case I.—*Menorrhagia lasting Fourteen Years—Twenty-nine Fibrous Polypi Removed from the Cavity of the Body of the Uterus at Four Operations.*

Miss A., an unmarried lady, aged thirty-six, was placed under

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[a] Pathological Anatomy of the Female Sexual Organs. Translated by Kammerer and Dawson, p. 153.

[b] Lectures on Diseases of Women. 3rd ed., p. 264.

my care by Dr. Martin, one of the physicians to Jervis-street Hospital, on the 22nd August, 1867, and admitted by me as a patient into the ward for diseases of women, in the Coombe Lying-in Hospital. She had been a governess, but had been reduced to poverty by ill health, consequent on menorrhagia, from which she had suffered for fourteen years. During this time she had been treated by several physicians, and in many hospitals; but, till she came under my care in the Coombe Hospital, and I insisted on being allowed to do so, no examination of the uterus had been made. When I examined it I found it enlarged so that the fundus could be felt above the pubes. It was somewhat irregular in its outline, and its cavity measured an inch longer than it ought to do, but the os and cervix were apparently quite healthy. She was blanched from the loss of blood, her extremities were œdematous, her breathing was short and panting, and her debility was extreme. On consultation with my hospital colleagues, Drs. Ringland and Sawyer, and with Dr. Beatty, who kindly saw the case with us, it was agreed to explore the cavity, and for this purpose six pieces of sea-tangle were introduced on the 5th of September, 1867, in the manner just described. On the following day the finger was passed into the cavity up to the fundus with great ease, and so well was the canal dilated that we could even see one of the tumours lying above the os internum. Three tumours, each as large as a pigeon's egg, were found and removed with the ecraseur. The patient was kept in bed for a week, but suffered no pain or inconvenience, and at the expiration of ten days left the hospital.

For a time the menorrhagia ceased and she improved in health, but the hemorrhage gradually returned, and in the month of March, 1868, she applied to be re-admitted into the hospital. The uterus was enlarged even more than it had been before, and again we dilated it and found a group of tumours filling it up. Dr. Beatty was still good enough to lend his valuable assistance, and with his help and that of my colleagues, I removed nine polypi, some of them large and pedunculated, others as small as a pea and sessile.

She recovered from this operation quite as well as on the previous occasion; but, although every tumour that could be discovered was carefully removed, the uterus never resumed its normal size; it remained large, and could still be felt above the pubes. The next menstruation was, however, healthy, both as to the quantity and character of the discharge; but in April the hemorrhage returned, and in May it was as bad as it had ever been, if not worse. The

uterus was now greatly enlarged; it could be felt above the pubes as large as a man's shut hand, and the sound passed into its cavity nearly four inches. On the 16th May we again dilated the os, which was as small and apparently healthy as ever. We now removed eleven tumours, four of which were pedunculated and grew from the fundus, and were nearly as large as any of those that had been previously removed; the others were smaller and sessile.

After they were all removed we painted over the whole surface of the uterus very freely with a saturated solution of the perchloride of iron in glycerine. For some days after the operation there was fulness, with pain and tenderness, in the lower part of the abdomen; but these symptoms quickly yielded to the use of poultices and injections of tepid water into the vagina, and on the tenth day the patient was able to be up and going about. The uterus, however, scarcely diminished in size. The os closed completely, and got into its normal state, as it did after the previous operations, but the body remained large and prominent above the pubes. No menstrual or other discharge took place till the 29th June, when it again occurred, and became hemorrhagic in character and very profuse. Consequently, on the 11th July, I again dilated the uterus, assisted as before by my hospital colleagues and Dr. Beatty, and by Drs. Churchill, M'Clintock, Atthill, and Collis, and I removed six tumours, one as large as a hazel nut, the others smaller in size.

After their removal I applied strong nitric acid freely over the whole of the inner surface of the uterus. On the next day the patient expressed herself as feeling less uncomfortable than after any of the previous operations; the pulse was 104; there was no tenderness of the abdomen; and the only complaint she made was of having a very offensive discharge from the vagina. I had ordered her a grain of opium every second hour after the operation. I now prolonged the interval to every fourth hour, and ordered the vagina to be syringed out, and a poultice to be applied over the hypogastrium. The following day the pulse was down to 96, and there was no fulness, pain, or tenderness, and the day after the pulse was down to 80. There was some purulent discharge from the vagina, but not offensive, and she wished to sit up, which, however, was not allowed, but the poulticing and opium were discontinued. I believe this is the first time strong nitric acid has been applied to the interior of the uterus. I used it at the suggestion of Dr. Ringland, to whom we are, I believe, also indebted for the first suggestion to use this acid in affections of the os and cervix.

The uterus diminished much in size after this operation; it sunk down into the true pelvis, and could no longer be felt above the pubes. On the 1st of August, exactly three weeks after the operation, I made a careful examination. The os was closed, the cervix was in its normal condition, there was no discharge. Examined by the bi-manual method of Marion Sims the fundus could be found regular in its outline, but rather larger than natural, and when measured with the sound its cavity was found to be nearly an inch longer than it ought to be. This patient was kept in the hospital, partly that she might have the benefit of good nourishment, and partly to watch the case; but as the next menstruation was perfectly healthy, she became anxious to leave, which she did on the 9th of October, 1868, and in a short time afterwards undertook engagements as a visiting governess, which she has since continued to fulfil. On the 6th January, 1869, she called on me at my own house, and reported that her menstruation had continued quite healthy—that the periods since she had left the hospital had lasted only four days each, and that she only required to use two napkins each day, notwithstanding that she had to walk a great deal, even during the period, in attending to her pupils. She said she felt strong and well, and " had got a blush in her cheek," all of which her appearance confirmed.

The wood-cut No. 1, at page 14, is a diagramatic view of the condition of the uterus ascertained by the finger to exist at the third operation; but seven of the polypi are shown, the others having been attached to the anterior wall, which is here supposed to have been cut away. The uterus and polypi are shown of the actual size, and six pieces of sea-tangle are shown traversing the whole length of the cavity, and projecting some distance beyond the os, as they should be when first introduced to effect dilatation.

The tumours when removed were subjected to careful microscopical examination, both by myself and Dr. Maurice Collis, and found to be simple fibrous tumours, consisting chiefly of convoluted fibres. The case is thus removed from the class of recurrent fibroids, described by West, Atlee, and Hutchinson.

Case II.—*Symptoms of Cancer of the Uterus — Small Hemorrhages and Offensive Purulent Discharges, lasting Eighteen Months, caused by a Polypus lying on the Os Internum—Polypus Removed by the Ecraseur.*

Mrs. B., aged sixty-four, consulted me on the 2nd April, 1868.

She stated that she had had five children and four miscarriages, the last about nineteen years ago. Since that miscarriage she had never been pregnant, and it was then fourteen years since she had finally ceased to menstruate. She enjoyed very good health till within the last eighteen months, when she began to notice a semi-purulent discharge and occasional small hemorrhages from the vagina, especially after much exertion or intercourse; and soon afterwards a constant brownish-green watery discharge, peculiarly fetid and offensive. Exercise sometimes caused rather free bleeding, and also increased the quantity of the sero-purulent discharge; but there had never been anything of flooding, or a continuous discharge of blood. Sometimes she saw small flakes of reddish skin in the chamber after passing water. When lying in some positions she suffered slight pain, but never of any great amount; and it was evident from her description that the pain was not uterine and not at all severe. She was a healthy active woman, looking some years younger than her stated age; and she informed me her mother was still alive, aged eighty-eight, and healthy and active.

A narrative such as this, notwithstanding the absence of pain, could not fail to raise in my mind apprehensions of cancer; and I fully expected to find this condition on examination, and in rather an advanced stage. The lady's own idea was that something had remained in the uterus since her last miscarriage, which had undergone decomposition and was coming away. She thought the substances observed in the urine were evidences of this; but she was very apprehensive, too, that she had cancer, and begged that I should tell her fully and plainly what I thought of her case.

On examination I found the os and cervix almost quite healthy. There was hypertrophy and induration, but merely such as would be caused by slight chronic inflammation. There was neither scirrhous hardness nor lobular enlargement, and the cervix was quite movable. The appearances presented when the speculum was introduced were those of an almost quite healthy os. When a sound was introduced a hitch was found in passing the os internum. The point of the sound had to be pressed well forwards to get past the obstruction, but, once beyond this, it entered the cavity of the uterus with ease, and showed its length to be more than double what it ought to be. The sound passed in between five and six inches.

It was now evident that, notwithstanding the presence of so many of the symptoms, there was no cancer of the os or cervix, the most usual seat of this disease; but the great enlargement of the cavity of the uterus made me fear there might be a cancerous or other tumour growing at the fundus, and I declined expressing any opinion as to the nature of the case till I should have an opportunity of examining the abdomen when the lady was undressed and in bed. Accordingly, an appointment was made for me to visit her the next day; and when she got up to leave my study I observed that a considerable-sized clot of blood fell on the floor, showing that the use of the sound had caused free bleeding, although I had introduced it most carefully and gently.

When I examined her in bed I failed to feel the uterus in the abdomen, either by ordinary palpation or by the bi-manual method of Sims. She was in very good condition, and had a large amount of sub-cutaneous adipose tissue; but still I was sure that if there had been any solid enlargement of the uterus I should have felt it. I now again introduced the sound, and I could plainly feel its point near the umbilicus, but could not trace the outline of the uterus, proving the absence of any solid deposit, and I concluded there was no cancer of the fundus, and that the enlargement did not depend on a large fibrous tumour, or on the presence of the remains of a retained fetus, as the lady herself had suggested.

On withdrawing the sound I found blood was again escaping from the os, and to control this I passed a bit of cotton wet with a solution of perchloride of iron up the canal of the cervix, fixed in a caustic-holder. When it arrived at the os internum its further progress was obstructed in the same way that the sound had been, and when I pressed it on, the obstruction seemed to yield, and immediately a stream of thick puriform matter escaped, which ceased to flow when I withdrew the instrument. I now passed a tubular sound (Simpson's *porte caustique*) into the uterus, and immediately matter of the same character began to flow, of which I collected between ten and twelve ounces. This fluid was of a thick consistence, of a brownish red colour, with streaks of fresh blood clots through it, and had an abominably offensive odour. It seemed to be decomposed and broken down fibrin, or partially decolourized blood clot.

It was now evident that the enlargement of the uterus was due to its having been distended by fluid, the hematometra or pyometra

of systematic writers, but the source of this fluid, and the cause of its being retained in the uterus, had still to be ascertained.

The mobility of the obstruction, its situation at the os internum, its evident attachment to the posterior wall, the freedom with which it bled on being touched, and the quantity and character of the fluid accumulated in the uterus, along with the occasional free bleedings described by the patient, could only, it seemed, be accounted for by the existence of a polypus of small size growing from the posterior wall of the uterus, close to the os internum, and it appeared probable that when hemorrhage arose from this, the blood instead of escaping externally collected in the cavity of the uterus, and gradually distended it, till it had acquired the large dimensions described. The polypus, from its situation at the os internum acted, it was probable, as a ball-valve, so as to prevent the escape of the blood, which, when effused, coagulated, and the serum trickled past the valve, and the retained coagulum became decomposed and broken up into the offensive grumous fluid, of which so much had been drawn off with the hollow sound. Before proceeding further in the investigation of the case, I asked to have another medical man associated with me, and Dr. Denham was selected for the purpose.

We met on the 27th of April, and I explained my views, and pointed out in a sketch where I believed the polypus to be. After a careful examination Dr. Denham quite agreed with me as to the propriety of making the exploration, and we introduced the sea-tangle tents for this purpose. Next day we again met, but found it necessary to introduce fresh tents and dilate the os still further, which we did, and on the 29th we proceeded to explore the uterus. The patient being placed under chloroform, we drew down the uterus with a vulsellum, assisted by a hand placed over the fundus, and so were enabled to get a finger through the os internum and into the cavity, where a small tumour was found growing from the posterior wall at the point I had indicated in the sketch. It was about the size of a small bean, was sessile, but had an elevated fold of mucous membrane running down from it into the canal of the cervix. When Dr. Denham examined it he felt this fold more distinctly than the tumour, and recognized it to be a fold of membrane from being able to press it back into its place. He now held the uterus firmly, and I ran a vulsellum up on my finger, and seized the tumour, which I then surrounded with the loop of a single wire ecraseur, and removed, along with the fold of mucous

membrane.    We now washed out the uterus and mopped it all over
with a solution of perchloride of iron.

Fig. 3 shows the position and size of the polypus, with a  fold  of
membrane running down into the cervix.    The uterus is shown of
the full size, as ascertained  by measurement, with its walls thinned
by  distention.

Fig. 3.
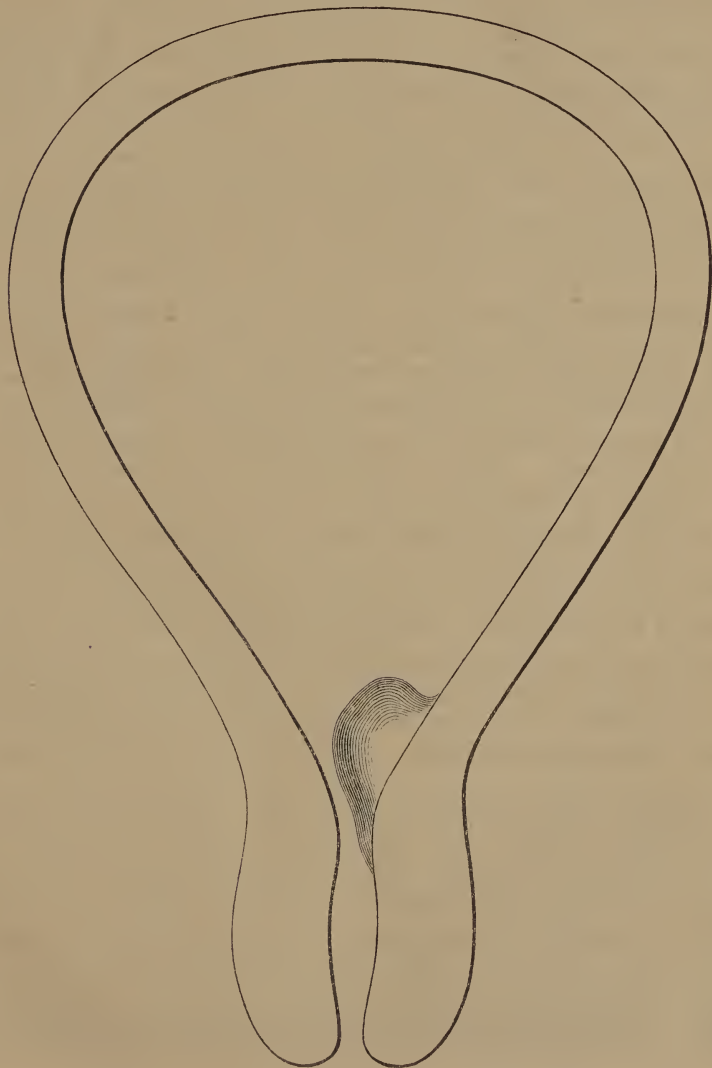
There was no bleeding, and no inflammatory action, pain, or discomfort, followed the operation. For two days there was a rather copious discharge of offensive sero-purulent matter, containing small clots blackened by the perchloride of iron; this gradually ceased, and the uterus, when measured on the 4th of May, was of its normal size.

A careful examination of the tumour after its removal showed it to be a simple fibrous polypus of the submucous variety.

So far as regards the polypus the case may be regarded as terminating here, but it would not be complete without the further history of the patient, which is far from being satisfactory. Though all the symptoms arising directly from the polypus itself, as well as those due to its peculiar situation, disappeared when the tumour was removed, chronic inflammation of the lining membrane of the cavity of the uterus, which had been set up by the long-continued contact of the putrid fluid, remained. This extended to the substance of the uterus itself, and gave rise to a considerable amount of hypertrophy and induration, so great as to impress both Dr. Denham and myself most unfavourably as to its nature, and though both the induration and hypertrophy have considerably lessened under the influence of treatment, and the general health is good, we are not yet satisfied that it is not gradually degenerating into malignant disease. There is one remarkable circumstance that we have observed in the after-treatment of the case, that I may pause to mention, though it does not belong to the present subject. On three occasions applications were made to the interior of the uterus; on the first of these it was strong nitric acid, and afterwards the solution of perchloride of iron, and immediately after each application, almost before the speculum could be withdrawn, she fell asleep, and remained so till spoken to, though she had been chatting the moment before. The first time this occurred both Dr. Denham and I were present, and neither of us had ever seen it occur before.

CASE III.—*Menorrhagia for Four Years, followed by an Attack of Excessive Flooding, and afterwards increased Menorrhagia— Fibrous Polypus in the Fundus of an Ante-flexed Uterus—Portion of Tumour Removed by the Ecraseur—Disappearance of the Remainder.*

Mrs. C., wife of a Naval Surgeon, first consulted me in October, 1867, and subsequently in May, 1868. She stated she was twenty-nine years of age, and had been married seven years, but had no family. Menstruation, till about four years before she came to me,

had been healthy in quantity, but painful. About three months after marriage she thought herself pregnant. The abdomen enlarged, but she did not cease to menstruate, and the enlargement proved to be caused by a phantom tumour, which disappeared at the end of nine months. After this she had good health for two years, but the menses then became too abundant. In March, 1867, she was startled, when menstruation was due, and flooding soon afterwards occurred, to a very alarming extent, causing very prolonged fainting at the time, and subsequently much debility and prostration. After this the menstrual discharge became very much more profuse than it had hitherto been, and she was seldom a fortnight at a time free from it. During the six weeks prior to the 1st February, 1868, there was only one week that it was not present.

When I first saw this patient I found the fundus of the uterus enlarged, and bent forwards on itself. The uterine cavity measured more than three inches in length. The os was exceedingly small, but otherwise healthy. The hemorrhage, enlarged fundus, and lengthened cavity, led me to express an opinion that there was probably a polypus at the fundus, and to recommend an exploration. The lady was, however, obliged to leave Dublin before this could be done, but she returned for the purpose in the following May, when Dr. Ringland was kind enough to lend me his valuable aid in the operation.

On the 13th May we proceeded to introduce the sea-tangle; the os was so small that we could only get in one piece of No. 4 size. We left this in the uterus till the following day, when we removed it, and introduced five pieces of a No. 5 bougie. Next day we were able to introduce a finger up to the fundus, having first drawn down the uterus, as already described. We found a fibrous polypus occupying the flexed portion of the uterus, as shown in the drawing (Fig. 4). This was seized with a fine vulsellum, and drawn as well into reach as possible, and the loop of the single wire ecraseur passed around it, but only a small portion could be encircled, owing to the peculiar situation in which it grew. We removed in this way about a quarter of the growth, after which we mopped out the uterus with the solution of the perchloride of iron. The recovery from this operation was very rapid and satisfactory. The next menstruation took place early in June, and the following one at the end of the month, both of which were quite natural and healthy. But the uterus remained ante-flexed, and we still thought the fundus somewhat enlarged; and as the lady was likely to be

obliged to travel about a great deal, we thought it advisable to make a second exploration before allowing her to pass from under our observation.    This we proceeded to do on the 8th July, when we had the benefit of Dr. Beatty's assistance and co-operation.

Fig. 4.
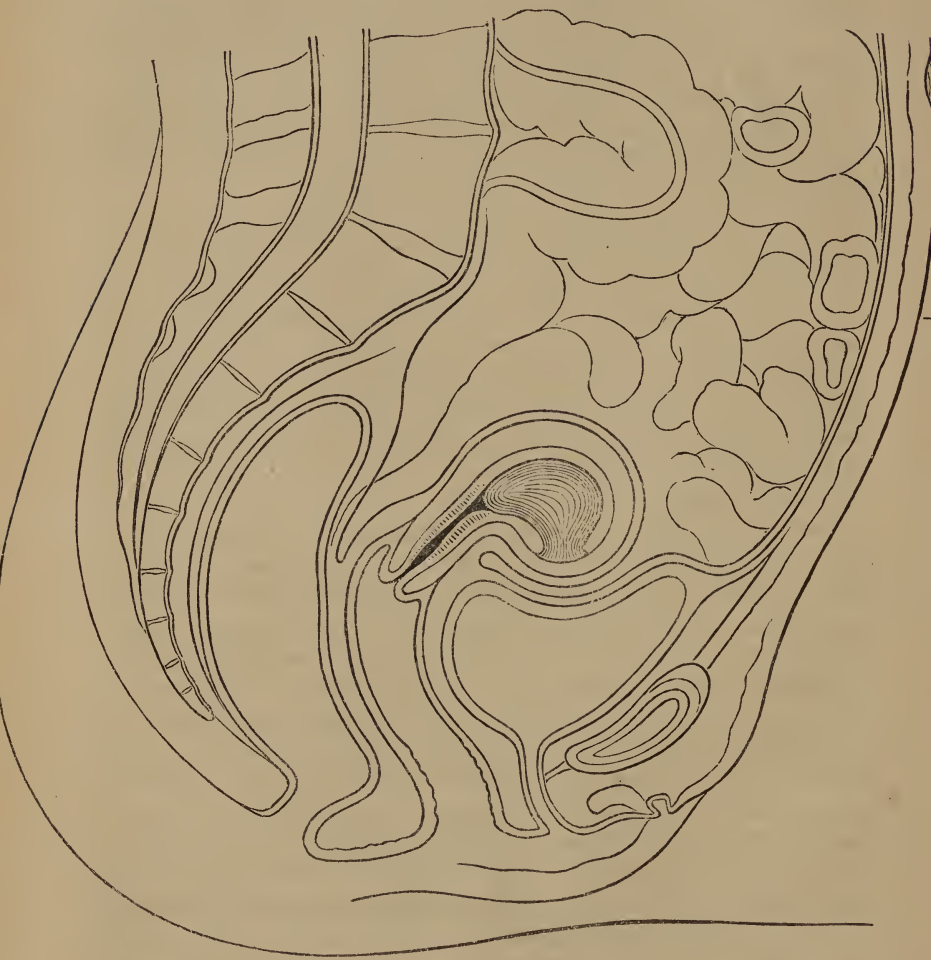


The os had now become as small as ever, and we had again to introduce a single tent, as in the first instance, but at the end of six hours we took it out and got in the bundle as before.    After

twenty-four hours these were removed, when both Dr. Beatty and Dr. Ringland, as well as myself, explored the whole uterine cavity minutely, and were convinced there was no trace of the polypus that had before existed in the anteverted fundus. The recovery after this operation was protracted by the occurrence of an attack of enteric fever, but was complete, and on the 4th September menstruation again took place in a natural and healthy manner.

This case presents several features of great interest; first, the ante-flexion of the fundus, a condition that is, in my experience, exceedingly rare, though stated by Klob to be more frequent than retroflexion, which is in this country very common; second, the complete disappearance of the tumour after the removal of a small portion. It has long been known that the peduncle of a fibrous polypus will disappear after the removal of the body of the tumour, but in this case the removal of less than a fourth part caused the total disappearance of the whole; third, the return of the os to its original pin-hole size and shape after the first operation affords a valuable lesson as to the instability of the dilatation that can be procured by dilating tents in cases of dysmenorrhea.

### FIBROUS POLYPI—EXTRA-UTERINE.

In the foregoing cases the polypi lay within the cavity of the uterus; in the following one the tumour grew from the anterior lip of the uterus and lay in the vagina. The polypi met with in this situation belong to the class of fibroids; they grow most frequently from the anterior lip, and may either be pedunculated or sessile. They are generally easily recognized and easily removed, and it is not easy, with our present knowledge and means of examination, to understand the difficulty that was even recently experienced in their diagnosis. Sir James Simpson[a] quotes Gooch as saying " he has seen the most experienced practitioners in London puzzled to tell what was the nature of the tumour in the vagina, and what ought to be done for it;" and he refers to Lefaucheux as describing the appearances, on dissection, of a case of this form of polypus, which during life could not be discriminated from complete inversion of the uterus. The use of the uterine sound has now, however, enabled us to overcome the difficulties which obscured Lefaucheux's case. Marion Sims[b] has described a case the

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[a] Obstetric Memoirs, Vol. i., p. 120.
[b] Clinical Notes on Uterine Surgery, p. 73.

diagnosis of which was attended with great difficulty from the polypus being of a mushroom shape, and covering the os and cervix so completely that when the finger was passed into the vagina a knobby hard growth was found occupying the place of the cervix, and the os could not be felt. The woman was forty-eight years of age, and from prolonged hemorrhage presented almost the complete physiognomy of carcinoma. When the ordinary speculum was introduced the tumour filled up its area, so that its true nature could not be ascertained; and the fears that had been entertained as to its being a case of carcinoma seemed to be confirmed. The true nature of the case was at once discovered when the parts were brought fully into view by means of Sims' duckbill speculum, and the removal of the tumour exhibited an os tincæ perfectly free from all appearances of malignant disease. In the following case an error of another description occurred, and not unnaturally, but was at once cleared up by a careful digital examination.

Case IV.—*Large Fibrous Polypus growing from the Anterior Lip of the Uterus, discovered immediately after the Expulsion of a Four Months' Fetus, and Mistaken for the Head of another Child— Frequent Miscarriages—Removal of the Tumour by the Ecraseur two Months after Delivery.*

In February, 1863, I was sent for to see Mrs. D., an out-patient of the Coombe Lying-in Hospital, who was stated to be sinking from hemorrhage after a miscarriage. I found her in a state of semi-collapse, with frequent partial convulsions of a hysterical character. The students in charge of the case showed me a fetus of about four months that had been expelled, and stated that there was another partially in the vagina, but the placenta had not come away, and there was still considerable hemorrhage. On examination I found a tumour in the vagina, hard, round, and movable, of about the size of the head of a four months' fetus, and on passing my finger round this tumour I found a slightly narrowed process that had been mistaken for the neck of the supposed child, but which was inserted into the anterior lip of the uterus and was continuous with it, showing the true nature of the case. The funis lay behind this tumour. By traction on this and pressure on the fundus, the placenta was extracted, when the hemorrhage ceased. The woman made a good recovery.

Two months afterwards this woman applied at the hospital to be relieved of the tumour, when she stated that she had had three

full-grown living children, and afterwards six miscarriages in succession, at the third or fourth month, but had never had any unusual hemorrhage or derangement of menstruation, and did not know of the existence of the tumour till told of it at the time of the miscarriage. On the 17th April, 1863, I proceeded to remove the tumour, assisted by Drs. Ringland and Sawyer, and in presence of Drs. Churchill, Jameson, Johns, and the class. The woman being placed in the semi-prone position, and the duckbill speculum introduced, I seized the tumour with a vulsellum, and, giving the instrument to Dr. Sawyer, got him to make slight traction. I then passed the chain of an ecraseur over the vulsellum and tumour, and carrying the point of the ecraseur well up above the tumour, removed the entire mass. No hemorrhage followed the operation, but on the third day, considerably before its time, menstruation set in, but was not excessive. About twelve months after the operation this woman was delivered in the hospital of a healthy full-grown child.

## SOFT OR MUCOUS POLYPI.

The soft polypus, or that composed of mucous membrane enclosing cellular or connective tissue, generally springs from the fundus of the uterus; it may, however, have its origin in the cervix, where it is formed by hypertrophy of the folds of mucous membrane constituting the *arbor vitæ*. In either case, but especially when springing from the cervix, the glandulæ of the mucous membrane may become distended with their own secretions in consequence of their mouths being obstructed, and then the polypus assumes more or less of a cystic formation. When growing from the fundus the soft polypus is generally single, but not always. I have in my collection a uterus containing two soft polypi attached to the fundus. When growing from the mucous membrane of the cervix they are, as a rule, numerous, and spring from different points, as figured by Madame Boivin and others. They are generally pedunculated, or become so in the process of growth, the peduncle being formed by an elongation of the mucous membrane. When long enough they pass down so low as to appear at the os externum, and have even protruded through the vulva. When they come within reach in this manner they may be removed with great ease and safety by torsion, by seizing them, as close to their origin as possible, with a fenestrated or broad-pointed forceps, and twisting them slowly till they are torn away.

They have sometimes, however, a broad basis of attachment in

the fundus, and do not pass out of the cavity, when the uterus must be dilated and the tumour removed by the ecraseur.

Case V.—*Menorrhagia for Eight Months, followed by Continuous Uterine Hemorrhage, Metrorrhagia, which lasted Seven Months; Soft Polypus at the Fundus of the Uterus—Removal by Ecraseur.*

Mrs. E., aged twenty-nine, married, and has several children; admitted into the ward for the diseases of women in the Coombe Lying-in Hospital, on the 12th May, 1868. This woman's last child was born on the 12th July, 1866, soon after which she accepted a situation as a wet-nurse, and held it till 24th June, 1867. The first menstruation after the birth of her child occurred in February, 1867, and the second in April; after this she menstruated every month regularly as to time, but the discharge was very profuse. In December, 1867, she menstruated twice, and soon afterwards bleeding became constant, and continued so till the polypus was removed. In May she consulted Dr. Mason, who advised her to come into the Coombe Hospital and place herself under my care.

On examination the uterine cavity was found to measure three inches, only half an inch more than it ought to do. By the bi-manual method of Sims the fundus was found enlarged and thickened, but to so slight a degree that it was thought exceedingly improbable there was any polypus; and it was determined to try to check the bleeding without exploring the cavity. She was kept under treatment for two months with this view; but, though local applications, would check the bleeding it always returned after a short time, and therefore it was agreed, on consultation with my colleagues, Drs. Ringland and Sawyer, to explore the uterus. On the 3rd July seven pieces of a No. 5 sea-tangle bougie were introduced, and on removing them next day a finger was passed into the uterus, and a soft polypus discovered at the fundus, to the left side. It was not larger than a French bean, but had a broad basis, and we thought it better to remove it with the ecraseur than attempt to do so by torsion. The operation was performed in the method already described, and is shown in Fig. 2, p. 16, which also shows the position of the polypus. The drawing is half the actual size.

After the removal of the tumour the uterus was mopped out with the saturated solution of perchloride of iron in glycerine, and the patient put to bed. On the eighth day after the operation she was able to be up, and on the twenty-second she left the hospital

perfectly recovered. She reported herself after each menstruation for the next three months. There was no further bleeding, her menstruation was natural and healthy. Her general health was good when she was last seen, and she was rapidly regaining her strength, which had been greatly reduced by the long-continued hemorrhage.

In the following case the tumour was removed by torsion:—

Case VI.—*Large Soft or Mucous Polypus, Springing from the Fundus Uteri, and extending through the Os Externum, Causing Profuse Hemorrhage—Removal by Torsion.*

On the 31st January, 1864, I was sent for late at night to see Mrs. F., an American lady, who had recently come to live near Dublin.

She was forty-five years of age; had had one child eighteen or twenty years ago, but had not since been pregnant. For some years past the menstrual flow had been much more abundant than formerly, and for the last six months there had been almost continuous hemorrhage, and consequently great debility. A short time before I arrived at the house she had a prolonged fainting fit in consequence of a sudden increase of the bleeding, after making a slight exertion. On examination I found a soft polypus hanging out of the os externum; but as she lived at a distance from town, and no arrangements had been made for an operation, I plugged the vagina for the night to prevent further hemorrhage, and arranged to remove the polypus next morning. Next day the polypus was still protruding through the os, and hanging down nearly an inch in length into the vagina. The os was patulous, and the polypus could be traced by means of the sound up to the fundus of the uterus. I seized it with a fenestrated polypus forceps as near its origin as possible, and twisted it off with great ease. No blood was lost during the operation, nor after it. The lady gradually regained her strength, and has had no return of the hemorrhage since.

### POLYPI REMOVED BY PRESSURE.

We are indebted to Marion Sims for drawing attention to the power of sponge tents in obliterating some polypi. In one case described by him, where the sponge had by accident been left in the uterus for a week, a fibrous polypus, the size of a pigeon's egg, disappeared; but this prolonged use of the sponge is attended with too much danger to be adopted as a mode of treatment. The

soft polypus is very easily removed in this way, but, as already said, its removal by torsion or the ecrasure is to be preferred when it can be caught. It is, however, to be borne in mind that this polypus very constantly disappears under pressure, for otherwise disappointment, and not a little vexation, may occur.

Case VII.—*Profuse Menorrhagia passing into Metrorrhagia— Mania—Soft Polypus Growing from the Fundus of the Uterus, and Removed by the pressure of Sponge Tents.*

Mrs. G., a lady approaching the climax of life, was placed under my care on the 29th April, 1867, by Dr. Cummins, of Cork, suffering from menorrhagia and well-marked mania, which he believed to be due to some uterine or ovarian irritation, but in her then state of mind she would not allow him to make a vaginal examination. This lady had suffered from puerperal mania in 1864, having had internal hemorrhage after her labour, but she perfectly recovered from this after four or five weeks' treatment.

In September of the following year, 1865, when the catamenia had for some time been returning too frequently, she again became maniacal, but recovered under the use of bromide of potassium.

In October of the following year, however, the catamenia again became too frequent, and also very profuse, and her mind once more gave way. This attack did not yield to treatment as the previous one had, and when I saw her in 1867 the bleeding from the uterus was almost continuous. I found the os patulous, the cervix enlarged and abraded, and the cavity an inch and half longer than it should be, with the fundus, as felt above the pubes, enlarged. I introduced a sponge tent, and on removing it the following day distinctly felt a soft polypus growing from the fundus. A larger sponge was now introduced, and arrangements made for removing the polypus next day; but when I came to do so the polypus was completely gone, no trace of it could be found, so I mopped out the cavity of the uterus with the solution of perchloride of iron, and directed the patient to keep in bed for a few days. The hemorrhage completely ceased—the mind quickly recovered— the abrasion at the os yielded to a few applications of nitrate of silver; and the patient has remained in good health ever since.

The connexion of the symptoms in this case is very evident. A patient pre-disposed to insanity gets severe flooding after labour, and in the weakened condition thus induced the insanity becomes developed, but disappears under appropriate treatment to reappear

when the system is again depressed by hemorrhage, and cease when the hemorrhage is stopped.

In the following case there can be no doubt as to a polypus having been present, though it was never actually seen or felt.

Case VIII.—*Uterine Hemorrhage for Nine Months—Soft Polypus Removed by Pressure of Sea-Tangle Tents.*

Mrs. H., aged twenty-six, a theatrical dancer by profession, consulted Dr. Rogers for hemorrhagia, and was advised by him to apply to be admitted into the Coombe Hospital under my care. She stated that she began to menstruate at twelve years of age, but had always been very irregular, four months sometimes passing without any appearance; that she had been a widow for the last five years, and had two children, the youngest seven years old; and that for the last nine months she had had a constant bloody discharge from the vagina, sometimes very profuse after much exertion, and never stopping for more than a day at a time, though she had been under the care of some of our most skilful physicians.

On examination the uterus was found enlarged, the cavity measuring three quarters of an inch more than it should; the os and cervix healthy. On consultation with Dr. Sawyer it was determined to explore the uterus, and on the 11th December the sea-tangle tents were introduced. Next day these were removed, and the uterus carefully explored, but no polypus or tumour of any kind could be found. The uterus was mopped out with the solution of perchloride of iron, and the patient returned to bed. After this there was no return of hemorrhage, and the uterus was exactly its normal length and size when measured on the 26th December.

## CYSTIC OR GLANDULAR POLYPI.

The cystic or glandular polypus also grows from the mucous membrane, or rather from the glandulæ imbedded in it. Of this polypus there are two varieties, one is formed by enlargement of the glandulæ Nabothi, and is composed of cysts varying in size from that of a hazel nut down. Polypi of this description are sessile, and in general several lie together in a group, and they are most frequently found close to the os internum. Their contents consist of clear mucus, and their walls are thin and easily ruptured, and when ruptured collapse. Rokitansky believes them to be absolutely new formations, but whether this is the case, or they

are formed by the distension of the normal mucous follicles of the part, they do not seem to fill up again once they have been ruptured. They frequently occur along with some of the other forms of polypus. In a uterus in my possession, a group of three lies in the cervix close to the os internum, while two rather large soft mucous polypi spring from the fundus; and there are two fibrous tumours in the same uterus, one intramural, and the other, a tolerably large one, sub-peritoneal.

This polypus does not cause any enlargement of the body of the uterus or any elongation of its cavity as measured by the sound. It may cause, or co-exist with, cervical leucorrhea, but in general its only symptom is hemorrhage, and it should always be sought for by dilating and exploring the cervical canal when uncontrollable hemorrhage cannot be otherwise accounted for.

CASE IX.—*Cystic Polypus of the Cervix in a Girl aged* 14-15— *Menorrhagia from commencement of Menstruation—Metrorrhagia Eleven Months—Removal of Polypus by the Action of Sponge Tents.*

This case is of great interest from the early age at which it occurred, and from showing that it may sometimes be absolutely necessary to dilate and explore the uterus even in young girls barely entering on puberty. Fortunately such cases are very rare, but those who saw this one had no doubt as to the imperative necessity of so doing.

J. K. was admitted into the ward for diseases of women in the Coombe Lying-in Hospital on the 2nd of April, 1866. She was in an extremely blanched and anemiated condition from uterine hemorrhage. Her mother stated that she was between 14 and 15 years of age; that she had commenced to menstruate when little more than 13 years old; that the discharge had from the beginning been very copious, and for the last eleven months had been almost constant, except for a short time when she had been under treatment in an hospital, and for a fortnight after her return home.

Every time this girl passed water a large quantity of blood escaped from the vagina, where it had been slowly accumulating during the interval. Her feet were œdematous, her breathing was short and panting, her face, gums, and lips were colourless, her pulse small, quick, and weak, and she was quite incapable of exertion. We learned from her mother that astringents and styptics had been tried in every form, even applied to the os uteri, and on consultation with my colleagues, Drs. Ringland and Sawyer,

and with Dr. Beatty, who kindly saw her with us, it was determined to at once explore the interior of the uterus, though we could not detect any enlargement or external sign of disease. The girl's condition was too full of immediate danger to allow us to spend time in trying less decisive measures to check the hemorrhage, even if we did not feel quite sure that everything of this kind that could be done had already been tried in the hospital in which she had been.

We accordingly introduced a sponge tent to dilate the os. Next day we discovered two glandular polypi in the canal of the cervix, close up to the os internum. Dr. Ringland and I both felt these distinctly, and satisfied ourselves as to their position, attachments, and nature; but as the os internum was not well dilated, and as Dr. Sawyer was not able to be with us, we introduced a larger sponge with the view of exploring the whole cavity of the uterus and removing the polypi next day, if not already broken down by the sponge. Next day the finger passed well up to the fundus of the uterus. The polypi that we had found in the canal of the cervix were completely broken up and gone, and we could find no others, so we washed out the uterus and mopped over the whole of the inner surface with a saturated solution of perchloride of iron in glycerine.

There was no return of the hemorrhage after this. The girl made a good recovery. We kept her in the hospital for some time that a menstrual period might pass over, but there was no return of menstruation, and she went home to Howth on the 24th May much improved in strength and appearance.

For eight months after she left the hospital there was no return of menstruation or hemorrhage whatever. She then began to menstruate regularly and in natural quantities, and now, at the expiration of three years from the operation, she is robust, healthy, and active.

Case X.—*Cystic Polypus, Patient aged 21—Metrorrhagia from the Commencement of Menstruation, and lasting Three Years.*

In the case of a young lady that Dr. Denham asked me to see along with him on the 12th January, 1869, a very similar train of symptoms to the foregoing presented themselves. She began to menstruate at seventeen, and since then the discharge had never ceased, though more than three years had elapsed, and all the means of constitutional treatment usually adopted for checking

uterine hemorrhage had been tried. On examination we found the uterus of the normal length, but the os was patulous, and the upper portion of the cervix enlarged, with a bulging outwards at one point, posteriorly. These conditions led us to believe there was a cystic polypus in the canal of the cervix, but on further examination we found three sub-peritoneal fibroid tumours growing from the posterior wall of the uterus and hanging down into Douglas' space, which complicated the case. However, as tumours in this situation do not generally cause hemorrhage, we determined on exploring the uterus, and introduced sea-tangle tents for the purpose. On removing these and passing in a finger, we did not find any polypus or tumour, but near the os internum, corresponding to where the bulging had been on the posterior wall of the cervix, we found a well-marked depression, into which the top of the finger would fit, and which it seemed probable was the seat of a cyst that had been ruptured by the sea-tangle. We brushed over the whole of the inner surface with a solution of the perchloride of iron. If, as I fully expect, the hemorrhage do not return, we may, I think, regard this case as one of cystic polypus, but sufficient time has not yet elapsed to justify any positive conclusion.

22nd January.—When these pages were going through the press, Dr. Denham reports to me that he examined this patient this day; that there has been no return of hemorrhage; that the os is closed, the cervix reduced in size, and the uterus is in a healthy condition.

The second form of cystic polypus is pedunculated; it is of about the size of a split pea, and hangs down from some part of the cervix by a long fine peduncle and generally lies just within the lips of the os. Sometimes it is attached by a fine peduncle nearly an inch long, but more frequently the peduncle is very short. According to my experience this is the most frequent form of polypus, and not unfrequently several of them are found together with peduncles of various lengths.

The uterus does not become enlarged with this form of cystic polypus any more than with the sessile, but there is always a constant hemorrhage, never very copious, but often productive of great debility from its long continuance. On examination the os is found patulous, with a rope of clear tenacious mucus hanging out of it, and there is generally superficial ulceration. When the speculum is introduced the polypus is brought into view on

separating the lips of the os or wiping away the mucus; and it should always be carefully sought for in cases of uterine hemorrhage before proceeding to open up and explore the cavity of the uterus, especially if there be no enlargement of the body or elongation of the cavity. In some cases the polypus is concealed from view by the stream of mucus from the cervix; but on touching this mucus with the solid nitrate of silver it becomes opaque and condensed, and shrinks so as to allow the polypus to come into view. This expedient should always be adopted before giving up the search in suspected cases. The polypus is easily removed by torsion, and after it is taken away it is well to touch the point from which it grew with nitric acid so as to seal up the vessels and at the same time cause the mucous membrane to contract and tighten itself up, and thereby prevent a relapse.

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ART. III.—*On Retroflexion of the Uterus.*[a] By LOMBE ATTHILL, M.D., Dub. Univ.; Fellow and Censor King and Queen's College of Physicians ; Ex-Assistant Physician, Rotundo Lying-in Hospital, &c., &c.

OF all the affections to which the uterus is liable, none is of more importance than retroflexion,[b] not only on account of its comparative frequency, but also because of the sufferings to which it gives rise, and the distressing train of symptoms which often follows its occurrence. We meet with it, too, at nearly every period of life, from puberty onwards. It is, however, rare in youth or in advanced age, the great majority of cases occurring during the period of life in which the uterine system is in the state of its greatest activity—namely, between the age of twenty and forty. It is, besides, an affection, the existence of which is more frequently overlooked than any other form of uterine disease, this being due rather to the fact, that the symptoms to which it gives rise have often but little apparent reference to the uterus, than to any difficulty in detecting it when once our suspicions are aroused.

[a] Read at the Dublin Obstetrical Society, December 12, 1868.

[b] By many writers the terms Retroversion and Retroflexion are used as synonymous. The condition to which I wish in this communication to direct attention is more accurately described as retroflexion, and that term I shall alone employ. Retroversion strictly understood as signifying a turning back of the entire uterus, is applicable rather to the change of position to which the gravid womb is liable when the fundus lies in the sacral hollow, and the os is forced up behind the pubis. By retroflexion, on the other hand, I understand a bending back of the fundus alone, the os remaining very nearly in its natural position.

When we consider the position of the uterus sunk low in the pelvis, with the bladder, an organ capable of such immense distension, placed in its immediate front, and constantly exercising a pressure backwards, and when we remember that many women, from mere habit or from motives of delicacy, oftentimes pass many hours without emptying that viscus, we can readily understand the frequency of this displacement as compared with any other to which the uterus is liable. But though the distended bladder may thus be the agent in directing the uterus backward, it is but a secondary cause, for the uterus itself must be in an abnormal condition, otherwise it would regain its proper position, whenever the bladder became flaccid. Retroflexion is, however, in my opinion, the result of causes, slowly producing their effect, all which causes may be grouped under one head—namely, those affections which increase the bulk and weight of the uterus, and more especially of its fundus. It is not, however, necessary that the increase should be confined to the fundus, though if that be the case the danger of retroflexion occurring is much increased, for if the bulk of the entire uterus be augmented, this will still most likely take place, because not only is there a force acting from before, directing the fundus downwards and backwards, but also because there is no resistance from behind to counteract that tendency. Now, the causes producing the condition likely to result in retroflexion may be reduced to three classes—namely,

1st. Chronic inflammation of the uterus, and its result; hypertrophy of that organ.

2nd. Subinvolution of the uterus after labour or abortion.

3rd. Tumours of the uterus. But as this last involves the consideration of special diseases, I shall not for the present allude further to it, but in this paper confine myself strictly to the two former.

I believe chronic inflammation[a] of the uterus to be a common cause of retroflexion, and one frequently overlooked. It is met with in two very different classes of females—namely, those who lead a very active life; and again, in those of weakly constitution and sedentary habits, such as needlewomen and teachers. Thus young women of active habits, who from necessity or for pleasure walk, ride, or garden much, or who follow employments or amusements

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[a] I have used the term " chronic inflammation " because it is frequently applied to the condition of the uterus I am alluding to. It is, however, far from being a correct one. " Active congestion " would be a more appropriate one.

necessitating much standing, will sometimes continue to pursue these duties or amusements during the catamenial period, forgetful or ignorant that the uterus is in a state of active congestion. The result is that the organ remains congested for an undue length of time, or it may be that the discharge may, from some accidental circumstance, be entirely suppressed, with the like result; in either case, the seeds of chronic inflammation are sown. The first symptoms are generally neglected; the disease creeps on insiduously, till at length the uterus, having become hypertrophied, is gradually bent on itself, and retroflexion is the result; then her sufferings compel the patient to seek relief. The following case illustrates this form of the disease:—

CASE I.—In November, 1847, I was consulted by a very healthy-looking young woman, aged about twenty-five. She was unmarried. She stated that she had always lived a very active life, and till within a comparatively recent period, had enjoyed most excellent health. That about three years ago having been compelled, in consequence of the illness and subsequent death of her father, to undertake the entire superintendence of a large farm, she underwent great fatigue, generally spending from eight to twelve hours each day in the open air, either on foot or on horseback, and never relaxing her exertions, even during the menstrual period. She at first suffered from a sense of fulness and weight in the lower part of the abdomen; but to these symptoms she paid no attention. At about the end of a year she for the first time perceived a new train of symptoms. She now experienced difficulty in passing water, and was obliged to strain in doing so. She also suffered occasionally much distressing tenesmus. After a little time her sufferings were further increased by a difficulty experienced in defecation. The bowels were not actually constipated, but their action caused great pain, and the feces, when passed, were as small as those of a little child. The catamenia appeared regularly, but in considerably diminished quantities. At length she sought the advice of a physician, who, having endeavoured without success to relieve her by treatment directed to the bladder and bowels, recommended her to consult me. I felt in this case, as I always do when the patient is unmarried, great reluctance to make a vaginal examination; but her sufferings were so great, and as treatment directed to other organs had failed to afford relief, I deemed it absolutely necessary to ascertain the condition of the uterus;

and on examining her discovered that organ to be much enlarged, tender to the touch, and completely retroflected, its fundus occupying the hollow of the sacrum, and, pressing against the rectum, this explained one of her symptoms—namely, the difficulty experienced in defecation, the irritation of the bladder being evidently reflex. With the view of retaining the uterus in its normal position I introduced a Hodge's pessary. The fundus was raised without difficulty, but the pessary first used proved to be too large, and caused so much pain, that after the lapse of a few hours it had to be removed. On a subsequent day, however, I introduced a smaller one. This answered admirably, and she experienced such relief that she was able to return home, and has since followed her ordinary occupations. In this case the uterus was in a state of chronic inflammation, and to this condition her greatest sufferings were due. In the following case, however, no inflammation was present. The uterus was simply hypertrophied, and a very different train of symptoms manifested themselves.

Case II.—A. M., aged twenty-one, a schoolmistress, had suffered for more than a year from occasional attacks of vomiting, which for the last three months had become incessant. She had been treated in various ways for the relief of this distressing affection, but without benefit, and at the time I saw her in consultation with my friend Dr. Little it had become so aggravated that for weeks previous everything swallowed had been rejected. She had even vomited lime water and milk, and this, though only one spoonful had been given at a time, and at regular intervals, no other food of any kind being allowed. In like manner she had been fed on beef-tea exclusively, a spoonful only being given at intervals of fifteen minutes. The food thus taken would be retained for a time, till some ounces had been swallowed, then the whole would be rejected. Nevertheless she had not become actually emaciated, and she only complained of debility, and pain in the pit of the stomach and in the back. The catamenia appeared at regular intervals, but in much smaller quantities than formerly. On examining the abdomen tenderness on pressure was detected over the left ovary, and to that spot four leeches were applied. The effect was marked. That afternoon the stomach retained some beef-tea, that being the first food retained for several weeks. The vomiting, however, did not entirely cease, it still occurred once or twice a day, nearly always in the morning. Being

now satisfied that the vomiting depended on some reflex irritation, we decided on making a vaginal examination, and I was, I confess, somewhat surprised to find the uterus completely retroflected. The fundus was enlarged, but little tender to the touch, and occupying the hollow of the sacrum. It was easily raised to its normal position, and to retain it there I introduced a Hodge's pessary of small size. This was from the very first borne without inconvenience, and from the time it was introduced the vomiting entirely ceased. The catamenia subsequently appeared in much larger quantities, and the general condition rapidly improved. On the 15th of March last I removed the pessary, it having been worn for three months. Since then there has been no return of her distressing symptoms, and I understand that she is now married.

In the next case which I have now to relate, while the sufferings were even greater, the symptoms, save in one point, which I shall have to refer to hereafter, were in no way similar to either of the preceding cases:—

Case III.—In 1867 I was consulted by a lady from the North of Ireland. Her case was a very distressing one. She was twenty-eight years of age, and had been married for eight years. Not long after marriage, and when in the fourth month of pregnancy, she fell down stairs, and was much hurt. She suffered, as the result of this accident, from severe pain in her side and back. Was treated for inflammation, leeched and salivated; and at the end of a fortnight aborted. For a year following she continued in a miserable state, the pain in her back and in the region of the uterus being so severe that she was seldom able to leave her bed. The catamenia were scanty and irregular. She was at length induced to go to Edinburgh, and placed herself under the care of Sir J. Simpson. He incised the cervix uteri, and introduced a stem pessary. The use of this brought on severe inflammation, and the instrument had to be removed. From this attack she recovered, and returned home feeling somewhat better, but soon relapsed into a condition even worse than before. She now experienced a distressing feeling of weight in the neighbourhood of the rectum, which was greatly increased, and accompanied by severe pains, at each menstrual period. She at length became a confirmed invalid. Walking caused such suffering that she dared not attempt even to cross the room. Life was, in fact, a burthen, and the medical man who

referred her to me told me candidly that he looked on her case as
hopeless. On making a vaginal examination I found the uterus
to be very low, the entire organ to be hypertrophied, and the
fundus pressing back and occupying the hollow of the sacrum.
The os was gaping, and freely admitted the tip of the finger, the
incision made by Sir J. Simpson never having united; a copious
discharge of semi-purulent mucous exuded from it. I leeched the
cervix on three occasions, and after a time introduced a Hodge's
pessary, which she bore without inconvenience. Her condition
now, after the lapse of ten months, is satisfactory. The following
is an extract from the last letter I received:—" I am happy to say
Mrs. —— is steadily improving. Her last illness (*i.e.*, catamenial)
was like the former, very satisfactory. For the first two days
there was not much discharge, but during the next three it was
very good, and it extended to the sixth day. She suffers very
little pain." It should be borne in mind that formerly the
catamenia never lasted for more than a few hours. In this patient
we had a long-continued inflammation of the uterus, terminating
in hypertrophy and retroflexion, and I wish to direct special
attention to the fact that in this case, too, one of the most
prominent symptoms was the great diminution in the catamenial
discharge.

I must now briefly refer to the class of cases comprised in the
second group—namely, those depending on subinvolution of the
uterus.

Hypertrophy of the uterus, or, as it is termed, "subinvolution"
of the uterus, occurring after abortion or labour, is a common,
and by some considered the most common, cause of retroflexion.
This form has, in all the cases I have met with, given rise to very
grave symptoms, for not only are the ordinary symptoms of
"pain," "dragging," &c., complained of, but it is frequently
accompanied by menorrhagia, which is often very severe; indeed,
it is for the relief of this we are most commonly consulted. I
recently had under my care, jointly with Dr. Churchill, a well-
marked case of this form.

CASE IV.—This patient was confined of her fourth child in
September, 1866. Considerable hemorrhage followed the separa-
tion of the placenta, and for more than a week subsequently the
discharge was excessive. She recovered slowly. At the expira-
tion of three months the catamenia appeared profusely, and

returned every three weeks, the discharge on each occasion being so excessive as to reduce the patient greatly. On examining her I found the uterus to be retroflected, and greatly enlarged; in fact, it had never regained its normal condition since delivery. In this case it was necessary to plug the vagina regularly at each menstrual period, so great was the hemorrhage. I am not able to state what was the termination of the case, as it passed out of my hands. The treatment adopted was the introduction of a Hodge's pessary, rest, and restraining the excessive menorrhagia by plugging. It was, however, of unusual severity. The following is one of a more ordinary type:—

Case V.—Mrs. J. consulted me in May, 1867, for menorrhagia. She complained of nothing except the debility consequent on the excessive drain. She stated that she had been confined five months previously of a still-born child; that her labour had been very tedious and difficult, and that it had been found necessary to have recourse to turning, that considerable hemorrhage followed delivery, and that her convalescence had been slow. Subsequently she had been sent to the sea-side, and treated by the administration of tonics, but the menorrhagia continued. On making an examination I found the uterus to be completely retroflected, and much enlarged; it was, in fact, a case of subinvolution of the uterus, and subsequent retroflexion. Treatment directed to the uterus proved efficacious. She recovered rapidly, and has since given birth to a living child.

The following case illustrates very well the great vagueness of the symptoms which sometimes accompany this affection:—

Case VI.—Mrs. B., a married lady, and the mother of several children, came under my care during the course of last summer. She had been suffering for nearly two years from severe paroxysms of pain, referred to the pit of the stomach, which came on at irregular intervals. She experienced these attacks for the first time shortly after her last confinement. Since then they had gradually increased in severity, till finally they returned almost daily, and the paroxysms had become so intense as to compel her to go to bed, where she remained for hours in the greatest agony. These attacks were frequently accompanied by severe retching, while occasionally the pain shot down the inside of the thigh. The bowels were obstinately constipated, and much straining was always

necessary in order to evacuate them. The catamenia were very irregular, coming on very profusely for a day or two, then suddenly stopping to reappear again, and so continued appearing and disappearing for some ten or twelve days. This lady had been under treatment for a very long period prior to my seeing her, but without being benefited; and at one time, when the vomiting had become very distressing, she had been fed for a week per rectum, with, of course, temporary relief, but the vomiting returned as soon as ever she commenced swallowing food. On making an examination I found the uterus to be enlarged, the fundus to be retroflected, and the canal of the cervix in a state of granular erosion. To the retroflection was evidently due the difficulty experienced in defecation. Wishing to cure, in the first instance, the granular erosion of the os and cervix uteri, I did not at once introduce a pessary, but though the local affection was greatly benefited by the treatment adopted, the distressing symptoms were but little relieved. A Hodge's pessary was now introduced; from that time she steadily improved, and for the past four months has been perfectly free from the attacks of pain and vomiting she had previously experienced, and this though immediately on her return home she underwent great bodily fatigue and mental distress, her husband having been attacked by fever, which terminated fatally after a short illness, three of her children being also in succession attacked by the same disease.

I shall add the outline of but one other case. It too is interesting as illustrating the vagueness of the symptoms attending this affection :—

CASE VII.—I was consulted in July last by a married lady mainly for the purpose of being informed whether she was pregnant or not. She stated that four years ago she had given birth to a living child, and that subsequently she had several times become pregnant, but on each occasion had miscarried at the end of the third month. She supposed that she was now pregnant again, because she suffered from incessant nausea, while at the same time her breasts had become enlarged, painful, and distended with milk, but nevertheless she was in doubt, because the catamenia appeared regularly and in *increased* quantities. I speedily ascertained that she was not pregnant, but that the uterus was retroflected, this, too, being a case of subinvolution, terminating in that displacement. In this case the pessary was at first very badly borne, though

finally one was introduced which answered admirably. In this, as in the three preceding cases, the menstrual discharge was increased in quantity, thus contrasting with the three cases first related.

Hitherto I have only incidentally alluded to the symptoms following retroflexion of the uterus, yet to this point I am most anxious to direct attention, for vague as are those related in the foregoing cases they have some points in common, and these distinct and well marked.

If we refer to any of the works on diseases of women we find the symptoms of retroflexion of the uterus stated to be " a sense of weight " in the pelvis, " pain in the back," or " shooting down the thighs," &c., symptoms which are common to nearly every form of uterine disease, and, therefore, worthless as a diagnostic mark; while, with respect to the menstrual function, no attempt is made to apply to it any definite rule. Thus Sir J. Simpson, in the first volume of his " Obstetric Works," says that he has found the " catamenial discharge to be most oppositely affected, occasionally in the way of menorrhagia, sometimes of dysmenorrhea." Again, Dr. Churchill says, " Menstruation may be profuse or painful, or both." I cannot but think that this apparent contradiction in the description of symptoms is due mainly to the want of careful discrimination between two classes of cases, depending on totally different conditions of the same organ. Doubtless there is not any one symptom on which we can rely as indicating the existence of retroflexion of the uterus, and I do not remember in my own practice a single case in which, prior to my making vaginal examination, I had sufficient grounds for concluding that this displacement existed. Thus in Case I. the most prominent symptoms were irritation of the bladder and constipation; in Case III.; they were pains over the ovary, and total inability to walk; in Case II. regurgitant vomiting alone was complained of. Nevertheless in all these the menstrual function was similarly affected, being in all much diminished in quantity, though not totally suppressed; while, on the other hand, in Cases IV. and V., menorrhagia, alone was the ailment for which the patient sought relief. Again, in Cases VI. and VII. the menstrual discharge was profuse and weakening, though in the one paroxysms of intense pain, and in the other reflex irritations simulating those of pregnancy, were the prominent symptoms. But though the result produced—namely, retroflexion—was in all these cases alike, the causes giving rise to that result were different in the

first set of cases—namely, those in which menstruation was diminished—the retroflexion was the result of chronic inflammation, and slowly produced hypertrophy. In the latter, where menorrhagia existed, it followed on ·subinvolution. I therefore came to the conclusion that we can assign a different pathological reason for the different conditions of the menstrual functions, and that according as the retroflexion depends on chronic inflammation or on subinvolution, so the catamenial discharge will be diminished or increased in the respective cases.

In conclusion, I would draw the following inferences:—

1st. That retroflexion of the uterus is a common affection, and that it is met with both in married and unmarried females.

2nd. That it is a secondary, not a primary, affection.

3rd. That when it is due to chronic inflammation or congestion of the uterus, terminating in hypertrophy, the catamenia are diminished in quantity, and frequently painful.

4th. But that when retroflexion is the result of subinvolution of the uterus, following labour or abortion, the catamenial discharge is increased in quantity, sometimes even to an alarming degree.

5th. That in addition to the symptoms common to all forms of uterine disease—namely, pain in the back, sense of weight, &c.— we have not unfrequently, where the uterus is retroflected, reflex irritation of the bladder, stomach, and breasts, occurring as to frequency in the order given, and also constipation of the bowels.

I shall add but a few words on the subject of treatment, as in the present paper I desire to call attention mainly to the pathology of this affection. Medicines are of but little value, save so far as the general condition of the patient may call for the exhibition of tonics. The displaced organ must be restored to its proper position, and retained in it. This should always be the first step, unless, as occurs in a comparatively small number of cases, there be so much local inflammation present as to render the application of leeches or other antiphlogistic treatment necessary. The raising the fundus to its normal position is generally effected without difficulty, unless, as occasionally occurs, it has become fixed in consequence of repeated attacks of pelvic inflammation. Under such circumstances treatment is of little use, and, unfortunately, these are the cases in which the sufferings are greatest. To retain the uterus in its proper position the patient must wear a pessary, and, in my opinion, none is equal for that purpose to

Hodge's ring pessary. Care must, of course, be taken to use one of proper size, and adapted to the caliber of the vagina. Too large a one will give pain, too small a one will be useless. Sometimes it is, however, necessary to allow the patient to wear a small one for a few days till the vagina becomes accustomed to its presence, when it should be replaced by a larger one. The pessary once introduced should be worn for a considerable time. Its presence seldom interferes with the use of a speculum, should it be found necessary to have recourse to local treatment. Maintenance of the recumbent, where it can be carried out the prone, posture by some considered alone sufficient for the cure, is in all cases an accessory measure of much importance.

The foregoing paper was written several months ago. Since then the subject of which it treats has been brought prominently forward at the Obstetric Society of London, and an animated discussion followed the reading of the papers. The views then propounded have not in any way influenced me, or caused me to make any change in what I had written. I agree with Dr. Meadows that inflammation, or, at least, active congestion of the uterus precedes, and is a common cause of, this displacement. Of course I do not deny that retroflexion may be congenital, or that exceptions may occur to this general rule. I do not, however, agree with him in his deduction from the foregoing opinion—" That our first care in the treatment of these cases ought to be to remedy that which is not only the cause of the flexion, but, at the same time, is responsible for the greater part of the sufferings, and that till this is accomplished, but not before, we may resort to mechanical treatment." On the contrary, I have proved by experience that when a pessary *can be borne* the support it gives to the uterus will not only greatly aid our local antiphlogistic treatment, but in not a few cases be of itself sufficient; and, therefore, I agree with Dr. Graily Hewitt, " that the flexion is the prominent feature of these cases, and that the restoration of the organ to the proper position is the first indication." I believe that given a healthy uterus, healthy ligaments, and a healthy pelvis, retroflexion is impossible. Dr. Barnes states that in many cases of secondary puerperal hemorrhage he found retroflexion to exist, and in this he confirms the views I have advanced, that menorrhagia is a symptom of retroflexion when it depends on subinvolution. Dr. Priestly stated that within his own experience retroflexion of the unimpregnated uterus had in one case given rise to " uncontrollable

chronic vomiting," a fact I had recorded. It has afforded me much pleasure to find so many of the conclusions I had arrived at, borne out by such eminent practitioners, of whose views I was altogether ignorant at the time I wrote the foregoing paper.

Finally, I would urge the necessity of bearing in mind that cases of retroflexion are occasionally met with which seem to cause neither distress, nor even inconvenience, to the patient, and that such cases should not on any account be interfered with.

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ART. IV.—*Modified Splint, for the Treatment of Fracture of Fibula, with Lateral Luxation.* By R. L. SWAN, F.R.C.S.I.; Resident Surgeon, Dr. Steevens' Hospital.

THERE is no assumption of originality in the construction of the splint, of which the accompanying woodcut is an illustration, for while it is often sufficiently easy to modify, or, perhaps, in minor details, to improve, to find what is new has become proverbially difficult. It is a modification of Dupuytren's splint, for the treatment of fracture of the fibula above the external malleolus, and consists of the following parts:—

A wooden splint, reaching from the inner side of the thigh to a few inches below the sole; a pad, fastened to a plate of metal, rendered more or less prominent by means of a screw, *c*; a chamois band, *d*, passing in the figure of 8 direction, round the instep, below the malleoli. This, attached by a hook to a strap, which, passing through a groove (of which there are three or four at the lower extremity of the splint, *b*), is fastened to a button at its external aspect.

Having had an opportunity of trying it many times in Dr. Steevens' Hospital, where fracture with lateral displacement existed, I am induced to claim for it the following advantages:—1st, facility of application; 2nd, neatness; and 3rd, superior ease to the patient.

The two first are, perhaps, not of much moment, though no surgeon will deny the comfort both to his patient and himself of easily adjustable apparatus. As regards neatness, the illustration is by no means unnatural. The third postulate is of superlative importance. In the ordinary splint—the instep covered with bandages, the foot in a fixed position, more or less inverted—no change

can be made without removing the entire appliance, a proceeding in itself painful and possibly injurious. In this modification the inversion of the foot can be increased by turning the screw, *c*, and thereby rendering the pad more prominent; and on the other hand, a few rotations in the opposite direction, by slightly diminishing the inversion, will afford an amount of relief scarcely credible from so slight an alteration.

The exposed condition of the seat of injury not only imparts a sensation of coolness to the patient, but also allows of the application of lotions if considered necessary. The surgeon can also, without difficulty, judge of the exact reduction of the fracture. The following brief cases are selected from a number of others:—

J. P., aged twenty-six, a patient of Mr. Colles, was admitted into Dr. Steevens' Hospital, July 16th, 1868. Fracture of fibula existed two and a half inches above malleolus, with great lateral displacement. Dupuytren's splints applied in the ordinary manner.

17th.—Spent a restless night; complaining of pain and tension at the seat of injury. The splint was taken off, during which, though gently handled, he experienced fresh suffering. The modified splint applied with a cold lotion to the seat of fracture. No further change made till union had taken place. He left hospital entirely recovered in less than six weeks.

T. R., aged sixty, admitted August, 1868, with a fracture one inch and a half above malleolus, presenting its ordinary symptoms. Applied the modified splint. Left hospital in seven weeks.

M. K., aged forty-two, sent to hospital by Mr. Wilmot. Had received a fracture of fibula many weeks before, for which he had been treated by a bone-setter. Permanent eversion existed. While standing, he rested on the internal malleolus, which had a tendency to ulcerate. Applied the splint, placing the pad above

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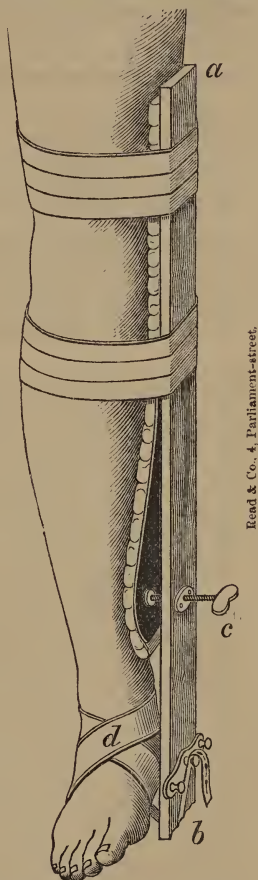
the inner malleolus.  The patient being himself anxious for im-
provement, followed directions with such success that he is now
able to rest the sole of the foot on the ground while walking, and
with the assistance of a boot finds his condition much improved.

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ART. V.—*On the Antiseptic Treatment of Wounds.*  By
    WILLIAM MACCORMAC, M.A., M.D.; Fellow of the Royal
    College of Surgeons in Ireland; Fellow of the Royal Medical
    and Chirurgical Society of London; Member of the Senate of
    the Queen's University in Ireland; Member of the Surgical
    Society of Ireland; Member of the Ulster Medical Society;
    and one of the Surgeons to the Belfast General Hospital.

MORE than one hundred years ago a learned Irish bishop proclaimed
as panacea for all human ills a very simple remedy, tar-water;
and it is somewhat curious that for one of the derivatives of
coal tar there should be claimed, at the present time, virtues
almost as great, and fortunately much more tangible, than those
which Bishop Berkley urged on behalf of his favourite nostrum.

   To Professor Lister, of Glasgow, we owe an innovation in
surgical practice, which, were it only partially to accomplish all that
it assumes to accomplish, would rank amongst the greatest surgical
achievements of our day.  The successful and rapid healing of
wounds and, in addition, rendering them innocuous during the
process of healing—robbing them, in fact, of the dangers which
so frequently beset them—are the merits claimed by Mr. Lister for
the antiseptic method.   And no surgeon can exaggerate the
importance of such pretensions if sustainable.  The question,
however, is as yet by no means finally settled; and it is in order
that what little experience I have recently gained in the use of
this method may be laid before the profession, that I have deemed
it expedient to offer this contribution to the pages of the *Dublin
Quarterly Journal.*

   The nature of the subject, along with its great importance,
demand the most careful and candid consideration.  And I would
here deprecate the attempts that have been made to deprive
Professor Lister of the great merit of introducing this plan of
treatment.

   Carbolic acid has been in use for a considerable time, but not

as it is used by Mr. Lister, and it is the particular method in which the carbolic acid, or other antiseptic, is used by that surgeon which constitutes Mr. Lister's claim to originality. It may indeed be that minute atmospheric germs, in gaining access to the recesses of a wound, prove the active cause of putrefaction. Certainly the researches of Pasteur, and the experiments of Lister appear strongly confirmatory of the theory. But whether this be the true cause or not, there is no one likely to dispute that the contact of putrescent animal matter with a wounded surface is fraught with many dangerous evils, and that the prevention of decomposition in wounds will avert many of the dangers incident to traumatic lesions. Carbolic acid or, to speak more correctly, Phenic alcohol appears to possess antiseptic properties of the very highest order; and is perhaps the agent best suited for surgical purposes that could be selected.

At first, I must confess, the results I obtained after the carbolic acid treatment were not so satisfactory as I had been led to anticipate; but on further and more careful trials, more decided benefits were realized, so much so as to lead me to attribute my previous illsuccess to want of familiarity with the method, or perhaps to some carelessness in the application of the dressings. The mode of dressing I have usually employed is not so complicated as that of Professor Lister, since the use of putty or plasters is, in most instances, dispensed with. The wound, all hemorrhage having been carefully staunched, is first washed out with a weak solution, one part in thirty of carbolic acid, the edges are then coapted, and several layers of lint, soaked in carbolic oil, one part in four, applied. The only other precaution needful is to keep the lint daily freshened with oil, and in this way its antiseptic properties seem thoroughly preserved. In cases of compound fractures the simple superposition of some folds of lint soaked in oil, has proved adequate to prevent septic change, without injecting the acid into the wound. In these cases there is usually profuse hemorrhage, and when the wound is small the air is washed out with the blood, so that it appears to me to be in most instances unnecessary, and therefore undesirable, to inject the acid. When abscesses are opened I do not generally think it needful, before incising them, to apply an antiseptic veil of lint. The tension of the parts causes the pus to jet out with more or less force, and so long as any regurgitation of air is prevented no harm can accrue.

Case I.—The first time I had occasion to use the antiseptic method was in August, 1867. On the first day of that month a quarryman, forty years of age, was in the act of withdrawing a charge of powder from a quarryhole. The blast exploded, and the poor man was driven to some distance by the violence of the explosion. When admitted I found him suffering severely from the shock. His face was tatooed by the gunpowder, the right eye destroyed by effusion of blood within the globe, and the anterior lamina of the left cornea engrained with small particles of charcoal, which with some difficulty were picked out by means of a sharp pointed hook. Both forearms were lacerated. The right had only sustained a severe flesh wound, but on the left side the ulna was extensively comminuted, and the soft parts covering the bone were literally blown away through an extent of three inches of the middle of the forearm. The parts were, in addition, blackened and much contused. I removed three or four loose portions of bone, and ascertained the condition of a much larger piece, about an inch and a-half long, which, although comparatively loose, I considered should be left untouched. The wound was then filled up with pieces of lint steeped in a saturated solution of carbolic acid, while a padded splint was bandaged along the anterior surface of the limb.

It is unnecessary to detail the progress of the case further than to say that the carbolic acid was renewed as often as required in the dressings. The discharge of pus from the wound proved limited. There was likewise a small amount of swelling in the limb, unattended with pain or other signs of inflammation, which disappeared in a few days. On the 15th the wound is reported as granulating, and in every respect healthy. In five more days the wound in the arm is stated to be nearly filled up, and the patient had sufficiently recovered from his other injuries to be able to sit up. On the 25th he is reported as convalescent, the wound of the broken arm is almost perfectly whole, while that in the other is beginning to cicatrize. In short, the compound fracture of the ulna, comminuted though it were, appeared to cause, in no respect, more constitutional disturbance than if it had been an ordinary simple one.

Case II.—The next case I should wish to report is that of a labouring man, fifty-eight years of age, who had previously enjoyed good health. Whilst engaged unloading a truck, laden

with railway metals, the horse suddenly started forwards, and an iron rail, which was being taken off the cart at the moment, fell heavily, crushing the man's leg against some rails lying on the ground.

The result was a compound comminuted fracture of both bones in the lower third of the leg. A small wound, from which issued a free arterial stream, led down to the broken tibia. The soft parts were evidently much contused. Carbolic acid dressing, with carbolized paste, was applied, and in about ten days it was ascertained that the wound had healed without suppuration. In six weeks the limb was put up in a starched bandage, and the patient was able to sit up the day after. No more pain or inconvenience was complained of than would necessarily attend the occurrence of a simple fracture. He left hospital in less than seven weeks after the accident.

Case III. was that of a young man, under the care of my colleague Professor Gordon. Whilst adjusting a driving-belt he missed his footing, and in his fall his leg passed between two cog-wheels. The injury inflicted was so severe, both of the soft parts and of the bones, that Dr. Gordon feared amputation would be unavoidable. He determined, however, to make an attempt to save the limb. The parts were dressed with the carbolized lotion, carbolic paste being superimposed. The patient progressed very favourably. In six weeks the splints were removed, union having taken place. A superficial granulating surface, which took a long time to heal, alone remained. The man otherwise made an excellent recovery—one which could scarcely have been anticipated after such a severe and extensive injury.

Case IV.—John O'Neill, fifty years of age, was brought to hospital in a state of great intoxication on the 26th December. No history could be procured as to how he met the accident. He had been picked up in the street, brought to his own house, and thence to hospital. He had probably been run over by a street car, and left as he lay by the driver. On admission he was still labouring under great excitement, and could with difficulty be restrained. Indeed, so violent was his conduct that he succeeded before I saw him in converting a simple fracture into a compound one. The limb was put up temporarily by the resident pupil in Clines splints. When I visited the man early next morning I found that he had spent a very restless night, and had completely

disarranged the apparatus. The limb was swollen with extravasated blood, and appeared also much contused. Both tibia and fibula were broken about three inches above the ankle-joint. The former bone had been extensively comminuted, and there was a small wound leading down to the fracture, caused, as previously mentioned, by the protrusion of one of the fragments. From this, venous blood was oozing copiously. The fracture, which had been much displaced, was readjusted, lint soaked in carbolic oil was laid over the wound, a back and two lateral splints were applied, and the whole apparatus was swung in a suspension cradle. Three days after, the state of the patient was very satisfactory. The pulse had fallen to 84. There were no signs of constitutional distress, or of local inflammation; in fact, the skin of the limb had become wrinkled in consequence of the partial subsidence of the swelling. The dressings and splints were not touched, but a quantity of carbolized oil was daily poured in the lint. The patient states that he is suffering hardly any pain, and only experiences such inconvenience as his constrained position necessitates.

On Jan. 9, a fortnight after the injury, the limb was examined for the first time. On removing the splints it was evident that the swelling had completely subsided. The patient complained of no pain, or even of much discomfort. The inner layer of the carbolized lint was firmly cemented to the wound, and was not removed. There was not a trace of suppurative action about the parts. The apparatus was reapplied as before. On January 19th, more than three weeks after the accident, the splints were readjusted a second time, and the wound dressed. On removing the lint the wound was found to have perfectly healed without a sign of pus. Without any exaggeration, it may be affirmed that this compound fracture was causing no more difficulty of any kind than if it had been a simple one. On January 24th, four weeks after the man's admission to hospital, he was fast recovering, and in all respects convalescent.

Case V.—Patrick Kelly, who states that he is forty years of age, but who looks ten years older, was admitted to hospital on July 31st, 1868. He is a plasterer by trade, and had fallen from a scaffold no great height a short time previously.

He was a very intemperate man, and in 1851 had had a paralytic seizure which largely deprived him of the use of his left arm and leg. His utterance is thick, and he protrudes the tongue to one side.

On examination I found the right leg fractured at the junction

of the lower and middle third of the limb, and the soft parts
around much contused. There was a wound just above the inner
condyle of the left humerus, which affords access to the elbow-
joint, and into which the finger easily passed to the opposite side of
the limb, right through the joint. A careful examination proved
that there was considerable comminution of the lower end of the
humerus. A large piece of bone, corresponding to the termination
of the internal condyloid ridge, lay loosely in the orifice of the
wound, and was removed. Several other pieces could also be felt
more or less loose. In short, the amount of injury appeared so
extensive, and the antecedents of the patient so unsatisfactory, that
his prospects, under any form of treatment, seemed to me most
unpromising.

Primary excision of the elbow-joint, with the possible alternative
of amputation should the injury appear too severe to justify an
attempt to save the limb, was very strongly urged. The man
stoutly refused to permit anything whatever to be done, except simply
to dress his arm. Carbolized oil was therefore applied on lint, and
an angular splint, to support the joint, bandaged to the limb. Some
slight oozing of blood followed, which coagulated in the dressings.
The fracture of the leg was put up in splints in the usual way,
resting on the outer side. Except soaking the dressings daily with
fresh oil, the arm was not disturbed until August 8th, nine days
after the injury. During this time the man complained of no
suffering from the injured arm, and there were absolutely no signs
of local inflammatory action, or of general disturbance. The
fractured leg, indeed, gave more trouble than the arm, as there was a
great deal of swelling accompanied by the formation of numerous
bullæ, filled with dark-coloured serum. On removing the lint
covering the wound of the elbow, a small quantity of matter was
seen. On clearing this away the opening appeared quite filled up with
granulations, level with the surrounding surface. The carbolic lotion
was now substituted for carbolic oil in the dressings. On the
16th September, six weeks after admission, I find the report in the
case-book is that up till this date the patient has progressed in
every respect satisfactorily, and that he is now quite convalescent.
He left the hospital soon afterwards, perfectly recovered from the
consequences of the accident.

Whatever share the antiseptic treatment may have had in
promoting so successful an issue in this case, there is no doubt that,
taking all the circumstances into account, this very serious injury

of an important joint proceeded to a favourable termination in a manner quite exceptional. There was throughout absolutely no sign of inflammation about the elbow, and the compound comminuted fracture of the joint seemed to cause less annoyance to the patient, and to invoke fewer signs of constitutional irritation or inflammation, than did the simple fracture of the leg. At the time Kelly left the hospital he enjoyed very considerable power of extending and flexing the arm, the motions of pronation and supination being also preserved, and these would doubtless become largely increased through time and exercise.

Case VI. is an interesting one. An intemperate man, called Barry, forty-five years of age, fell whilst drunk. According to his own statement he merely tumbled off his feet on the edge of the footpath. He had been celebrating, after his fashion, a rather notorious anniversary in the North of Ireland, the 12th of July, on which day the accident occurred. However produced, we found that he had sustained an extensive contused wound, some six inches long, stretching from the back of one condyle of the femur right across the front of the knee-joint to the other. The patella was transversely fractured at the middle of the bone. The quadriceps extensor tendon, where attached to the upper border of the patella, was also much torn. Of course the knee-joint was extensively laid open, and the articulating surface of the lower end of the femur could be touched and seen.

Formerly not much hesitation would have been shown, under these circumstances, in amputating the thigh. I placed the limb, however, in a carefully prepared straight splint, and carbolized oil was put on the wound after it had been cleaned and saturated. As additional safeguards against inflammation, Signoroni's tourniquet was adjusted over the course of the femoral artery, near the groin, and a bag of ice applied to the joint. The day after, the parts were found to be somewhat swollen, the patient experienced pain, the pulse was 112, and the tongue was furred. These symptoms soon subsided, and five days after the accident the pulse was only 100, and the tongue cleaning, while the swelling around the joint was diminishing.

I need hardly enter into further details. The edges of the wound sloughed to a slight extent, and when the sloughs were thrown off, healthy granulations occupied their place, and these, by the 12th of August, had almost quite cicatrized. Perfect

bony union took place between the broken fragments of the patella, and, what is yet more strange, anchylosis of the knee-joint did not occur. The man left the hospital on the 28th of September, and he could then flex the limb through fifteen or twenty degrees. As the treatment employed was somewhat complex, one cannot exactly mete out to each remedial agent its due share in promoting recovery, or say how far anyone was paramount. It may be interesting to quote a case mentioned by Mr. Syme in the *British Medical Journal* for January 4, 1868. A farm servant, fifty-three years old, cut his knee open with a scythe, dividing the quadriceps extensor tendon. Carbolized oil was freely used, both inside and over the wound, and a splint to keep the limb straight was applied. Not the slightest constitutional or local disturbance followed. The stitches were removed on the fourth day, the wound being healed, and the patient left the hospital with a strong and flexible limb in a month. This result Mr. Syme characterizes as a very remarkable, if not unprecedented occurrence. My own case is one of much more extensive injury to the same joint, inflicted in a much ruder manner, and yet recovery rapidly took place, under what appeared most unfavourable circumstances. The real question at issue is how far the antiseptic treatment employed in these two cases promoted these remarkable, but certainly not unprecedented, recoveries. I have the most distinct recollection of a case which happened about fifteen years ago, when I was House Surgeon in the hospital of which I am now the surgeon. A man about fifty years of age was admitted with extensive compound comminuted fracture of the patella, caused by falling on his bent knee from a considerable height. I readily passed my finger into the cavity of the joint, through the fragments of the broken patella. The man would not submit to amputation, and he recovered perfectly with a useful limb. Antiseptic dressings in those days were not much thought of.

Case VII.—A lad of fifteen had his hand caught in a fluting machine in one of the mills. A wound, opening into the wrist-joint, extended from the ulnar border of the palm around the base of the thumb, as far as the base of the metacarpal bone of the index finger. The soft parts on the radial border of the wrist had been completely severed. The trapezium and trapezoid were both injured, the scaphoid bone was displaced backwards, and the joints of the second row of the carpus laid open. Carbolized oil

dressings were employed, and a palmar splint, extending up the forearm, applied. Although such severe injury had been inflicted upon a very complex joint, there ensued only a moderate amount of inflammatory swelling, with but trifling suppuration, and recovery proved so rapid that in a fortnight the site of injury was found occupied by a superficial granulating surface, of which the greater portion had cicatrized in the course of the third week. In five weeks the boy left the hospital, the power of motion of the thumb, no doubt, greatly impaired, and with a good deal of stiffness of the wrist, but otherwise likely to have an extremely useful hand.

CASE VIII.—I had recently occasion to amputate the thigh in the lower third of the limb for a large cartilaginous tumour of the tibia, occurring in a young labourer. Carbolized dressings and antiseptic ligatures were used. The stump was not touched for a week, save to pour carbolized oil on it daily, and on the dressings being taken off, the flaps were found united firmly almost throughout. At the external angle of the wound, the only part unclosed, there had been a slight oozing of blood, and one drachm of innocuous pus escaped. From the very first the patient enjoyed the greatest comfort and relief, and there was no constitutional disturbance whatever. One fortnight after the operation, it is reported in the case-book that all the ligatures are gone, that the flaps are both deeply and superficially united, without a trace of sinus. In short, the patient is quite convalescent, and able to get about. His general condition is excellent, and the only complaint he made since the limb was removed was that he did not get sufficient to eat. Such complete union after amputation of the thigh, without either general or local disturbance of any sort, is a clinical fact of sufficient rarity to be worthy of record.

I need scarcely weary the patience of my readers by detailing other instances in which I have used carbolic acid dressing. I have employed it in various ways to wounds, after opening abscesses, as an application to non-infecting venereal sores, and to phagedenic and other ulcers, with very beneficial effects. Sometimes I have met with disappointment, but generally the results have been extremely satisfactory and encouraging. The instances I have cited are perhaps, on the whole, the most important and illustrative that have come under my observation, and merit, I think, the serious attention of practical surgeons.

These and similar cases, occurring as they have done in the practice of many surgeons, must be more than mere coincidences. No doubt wounds healed kindly before carbolic acid was heard of, and on the other hand some forms of injury, taking place in unhealthy subjects, will do badly under any kind of treatment. But all this notwithstanding, the results which have been achieved since the antiseptic method has been used, appear such as to cause what was formerly the exception to become the rule. It was heretofore a very exceptional matter to see a compound fracture of the lower limb unite, as if it had been a simple one. Surgical fever, often of the severest type, necrosis of portions of the bone, diffuse inflammation and suppuration of the limb, with tedious recovery, or hectic and death, were not uncommon. The experience which I have had leads me to hope and believe that such accidents will become rare when antiseptic principles of treatment are more generally recognized and adopted.

The conclusions I am disposed to draw in respect of the surgical uses of carbolized dressings are—first, that by their means those conditions which promote the formation of pus are sometimes wholly prevented, at other times greatly diminished in power, and that when pus is formed it proves an innocuous fluid, not prone to decomposition, and not injuring by its presence the wounded surface with which it is in contact. Secondly, I think the amount of pus is diminished where suppuration does occur. Thirdly, I have been much struck by the absence of those results of serious injuries, which so usually ensue both in the neighbourhood of the wounded parts, and constitutionally. I have observed over and over again the almost total absence of pain, inflammatory swelling, and surgical fever where such might otherwise have been expected to occur. In extensive injuries, involving the deeper seated parts, it has appeared to me that those structures heal more readily, and that the wound soon becomes merely superficial, a granulating surface closing in, and protecting the tissues beneath. When this result is attained it then becomes no longer necessary to continue rigidly the antiseptic treatment, and the wound may be treated like any ordinary superficial ulcer, with such applications as may appear best suited to promote healing, amongst which the carbolized lotion should occupy a high place. Fourthly, I am disposed to believe that pyemia will become comparatively of rare occurrence, but to establish this as a certain fact will require a very long series of observations. The theory that Professor Lister offers to account for all this is one of great simplicity, and one

which so far explains the facts observed, and until one more satis-
factory be offered, we are perhaps bound to accept it. However, be
it true or false, by acting strictly in accordance with its requirements,
the surgeon will, I believe, procure results which he could not
otherwise have anticipated. I think the candid and truly
scientific manner in which Professor Lister has promulgated his
discovery is deserving of much praise. It is now for surgeons
to examine into his claims in an impartial and scientific spirit.
It is only, I would add in conclusion, by a large and extended
experience that such claims can be fairly and sufficiently tested.
For this reason I considered the knowledge which I have
hitherto been able to gain of the uses of carbolic acid in antiseptic
surgery are deserving of the consideration of the readers of this
journal.

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ART. VI.—*On an Epidemic of Fever at Simons Town, Cape of
Good Hope, in* 1867-68. By FLEETWOOD CHURCHILL, jun.,
Fellow of the King and Queen's College of Physicians;
Licentiate of the Royal College of Surgeons; Physician to the
Institution for Diseases of Women and Children in Pitt-
street; to the Magdalen Asylum, and to the Clergy Daughters'
School.[a]

IN July last, the south-western part of the Cape Colony was
visited by an epidemic of fever, which lasted until the end of
April, when it ceased as an epidemic, though cases still appeared
as late as July of this year. The majority of the cases which I
saw resembled typhus in their symptoms; some, however, in
character approached more nearly typhoid, and some ordinary
continued fever. At first we felt much anxiety lest it might
turn out to be the much-dreaded Mauritius fever, as for a long
time we knew little of the exact nature, though we heard
much of the fatal results of that fever; in fact, it was from
England that we received the first definite information on that

[a] Read at a meeting of the Medical Society of the College of Physicians.

point. Simons Town, where I lived, is twenty-four miles south of Cape Town, where the disease first showed itself. The first case that occurred was in the last week of August, in a child who had not been in Cape Town that year, and none of whose family living in the house had been there for some short time before the disease broke out. Simons Town itself is a small town of 2,000 inhabitants, the large majority being of the coloured races. It is situated at the north-western extremity of False Bay, and both it and the main road are built on level ground, which has been cut out from the side of the surrounding hills. In front of the houses which face the sea is the main road, running about twenty feet perpendicularly above the seabeach, and on the bank thus formed the drains, and nearly all the sewerage of the town, is emptied. Higher up the hill is a smaller road, with houses on both sides, which have no drains at all, except a small paved gutter, which runs on both sides of the road, and empties itself nowhere in particular. In the summer the heat of the sun dries up its contents, while in winter the rain floods it; so that part of the filth is spread over and runs down the connecting lanes, to the Main-street, where it may, or may not, find its way into the underground drains. The supply of water from tanks supplied by springs, for drinking and house purposes, is (except in a very dry summer like the last) quite sufficient. The houses in the Main-street are mostly fair sized, but all the houses, or nearly all, are built with flat roofs, either mortar or iron, with just sufficient slope to let rain run off. During summer the mortar roofs crack, and leak badly when it rains. At the north end of the town runs a stream, which is nearly dry in summer, as it depends on the drainage from the large flat valley above the Simons Town range of hills; along its banks a range of houses has been built, which have neither backyards nor privies, and into which water has not been led. The inhabitants procure water from a spring during the summer, and from the stream itself during winter. Most of the people here are washerwomen, and wash in the stream itself. In the summer, when the water is low, and almost stagnant, the smell from it is disgusting, besides which, the people who live all around use the bushes as water-closets; and as the ground there dips towards the stream, the washings of the hill side, after rain, find their way to the water. There are no drains there at all. The hills are metamorphic sandstone, overlaying granite, with a northerly strike and very irregular dip, and at their base thickly covered with bush; indeed the ground on which the

town stands presents more the appearance of a talus, resting on granite, and composed of dense, tenacious blue clay, then red clay, with bands of sandstone breccia, and in parts a thick bed of iron stone covering that. Very few of the houses in the town are provided with water-closets; instead of a cesspool, the usual plan is to have a privy, with a tub of wood or iron, which is emptied when full, or at the owner's will. In some few cases the owners utilize the contents of their tubs, by having them buried in their gardens, but generally the tubs are emptied into the sea, and washed there. There is a law forbidding them to be emptied after 6 a.m., or before 9 p.m., or the contents to be thrown on the bank which bounds the main road. All the houses inhabited by either Malays or Blacks are very much overcrowded — men and women of all ages sleeping and living in the same room, which may partly account for the utter want of any attempt at morality on the part of the Blacks. But the overcrowding does not produce the same injurious effects among the Malays as the Blacks, for this reason: the Malays are personally very clean and temperate in their habits, their houses are in general fairly clean, and contrast favourably with rooms I have seen in this city. Both Malays and Blacks have equal objections to open windows. I think, considering the filth, overcrowding, and neglect of all sanitary precautions, the only wonder is that Cape Town and Simons Town are as healthy as they are. Fever, small-pox, scarlet fever, and measles, are diseases which do not appear in either of these towns except as epidemics. Cholera has never visited the colony. There is one village between Cape Town and Simons Town where fever of a low type is not uncommon, but that place is situated at the foot of high hills, on a low damp soil, and surrounded thickly with trees. I believe that the reason why Cape Town and Simons Town escape is that, from their position, they are open to the full force of the heavy N.W. and S.E. gales that blow during the winter and summer months; the nor-wester brings the semi-tropical showers that prevail during winter; while in the summer the south-easter gales seldom cease for more than a week or ten days at a time, and with it there is the hot sun; the south-easter is the evaporating wind, is always cold and dry, and has the popular name of the " Cape Doctor." The high temperature in the summer depends on the sun, not the wind, so that the variations in the thermometer are great and sudden; between sunrise and sunset, 20 to 25 degrees is by no means an uncommon range at all. The barometer does not vary so much,

the greatest range it has taken during eleven years has been from 30·80 down to 29·46 (I have taken the even numbers); but I have only seen it reach those points once. The heaviest gale that ever was witnessed at the Cape accompanied the low reading. The ordinary range is about an inch—rather less than more. As might be supposed from the sudden thermometric changes, rheumatism is very common, and phthisical cases do very badly in Cape Town; while Simons Town, both for frequency and rapidity, is a perfect slaughter-house for that class of patients, which do very well in other parts of the colony. I have taken up a good deal of space in this description, because I am anxious to make it clear why this particular portion of the colony should have suffered so severely from the epidemic, while only a very few towns on the mainland, and those only in direct communication with Cape Town, had any cases at all. One town is an exception, however, as it is situated on the sea coast, nearly 400 miles east of Cape Town, and the disease appeared there a short time before it did in the latter place. Whether the fever was imported from that town, by sea, to Cape Town or not, I cannot say; it is pretty certain that it did not come by land, as the villages on the direct route between the two places escaped, with the exception of one about 12 miles from Cape Town.

The first case in Simons Town occurred, as I have said, in the last week of August, 1867, and the epidemic lasted till the end of April, 1868, during which time there were 335 cases, and 26 deaths. In this number I do not include the cases which occurred in H. M. ships. They were treated, partly in the R. N. Hospital, but mainly in a temporary hospital fitted up in the dockyard, under the charge of my friend Dr. Olive, of H.M.S. " Seringapatam." I had no account of these cases at all. I will first give the total number of cases in the Simons Town district, as that will include several cases in my district, but which I was unable to attend personally owing to the long distances and the pressure of work in Simons Town itself. The plan I adopted with these outlying places was to show a few cases to some of the more intelligent people living there, explain what symptoms were likely to occur, and give them quinine, with directions how to use it. From them I learned how these cases were going on, and just managed as well as I could.

The total number of cases in the Simons Town district has been :—

|          | Total Cases | Sex | | Deaths | | Total Deaths |
|----------|-------------|------|--------|------|--------|--------------|
|          |             | Male | Female | Male | Female |              |
| White,   | 66          | 36   | 30     | 2    | 0      | 2            |
| Malay,   | 59          | 35   | 24     | 2    | 0      | 2            |
| Black,   | 210         | 117  | 93     | 16   | 6      | 22           |
|          | 335         | 188  | 147    | 20   | 6      | 26           |

In Simons Town alone, under my own personal care, I had—

|          | Total Cases | Sex | | Deaths | | Total Deaths |
|----------|-------------|------|--------|------|--------|--------------|
|          |             | Male | Female | Male | Female |              |
| White,   | 62          | 31   | 31     | 1    | 0      | 1            |
| Malay,   | 51          | 30   | 21     | 2    | 0      | 2            |
| Black,   | 176         | 90   | 86     | 13   | 4      | 17           |
|          | 289         | 151  | 138    | 16   | 4      | 20           |

Forty-six cases occurred in the outlying portions of the district, and out of these six died—five being Blacks; it is possible that had they been in Simons Town more of them might have recovered, but they refused to be moved.

I will now describe one of the fair average cases. A white woman, aged thirty-five, one of whose children I was attending, and who had always been healthy, complained of not having felt well for the last seven days; was chilly, with headache, and slight pains in her legs, though up till this time she had been quite able to attend her sick child. On that morning I found her sitting down nursing her baby. She hardly answered when I spoke to her. Her tongue was thickly covered with white fur; her breath very offensive; her face looked very dusky, though the cheeks were slightly flushed; eyes bright, no suffusion, and no intolerance of light; her pulse slow, 50; regular, and very weak. She had

much less milk than a few days before. With some difficulty I persuaded her to allow the child to be sent out to nurse. Next day the milk was almost gone, and the breasts were flaccid; had had rather a bad night; slept very little, waking up startled from short dozes, and talking a good deal. At this time—10 a.m.—she was quite delirious; her bowels had not acted at all for some days, and the urine was scanty and high coloured; her skin was hot and dry; no appetite, but considerable thirst, which was quite satisfied with small quantities of cold water. With some difficulty I got her to answer a few questions, as she was very deaf. She made no particular complaint, but after answering my questions correctly, wandered again instantly. On the fourth day a few petechiæ were noticed on her chest. Subsequently a few showed on the back and arms, but none on the face or legs. She continued in this state, with very little change, till the fourteenth day, when the few petechiæ there had been quite disappeared. She now began to perspire, and to improve very slowly; but it was not till the thirtieth day of her illness that the fever was completely gone, and even then she was a little deaf; but she slept well, her skin was cool, and her appetite fairly established.

It was, however, more than two months longer before she was able to attend in her shop, or look after her children. This is a fair average case; not nearly so bad as many, and worse than some. The amount of prostration caused by the disease was curious, and bore no proportion to the amount of fever which it followed. In my own case I had been seeing my patients in the morning, and felt quite well. I came home to dinner in the middle of the day, and as I was tired I laid down to rest for an hour. I fell asleep, and woke with a hot, burning skin, and great thirst, but no headache. I thought it was merely from exposure to the sun, and was going out again, but my friend Dr. Olive came in just then, and told me what was the matter. Next day I could hardly walk from weakness, and though the actual fever only lasted five days, and I never had felt bad enough to stay in bed, it was three weeks from the time the fever left me before I was able to walk a mile and a half over a level road. In all the cases there was great debility remaining, and, as I said before, the amount of prostration was out of all proportion to the fever; indeed, I think that there was more debility, and it came on more suddenly in slight cases than in those of a more severe character. In one slight case, in a lady, I found that each of the finger nails had two small purple spots,

one on each side; they came during the night, and gave no pain, lasted some time, and then died away. I do not know whether they ought to be considered as petechiæ or not, but there were none others. The most remarkable point in this lady's case was, that though not a more severe attack than my own, it was followed, in addition to the usual great prostration, by a curious loss of memory as to the order and way in which she ought to put on her clothes. For more than a week she was obliged to lay her things on a sofa in the order in which she was to put them on next morning, and even then she could not always remember the way to put each article on. As an example: one day she told me that she had been for more than a quarter of an hour trying to put her dress on by getting in at the neck part. Other mistakes of the same sort constantly occurred for a fortnight, when her memory was restored. I have no opinion to offer as to what this state depended on.

The great majority of the cases were similar to the one I have read, differing only in intensity, but in a few there were some different symptoms superadded. In seven cases (six women, and one man, who died) there was very slight difficulty in passing water; in no case did it amount to complete retention, nor was it necessary to use a catheter, as they were all relieved in a few minutes by hot fomentations applied over the bladder. Of these patients the man only was delirious at the time, and they each complained of the difficulty themselves. In some instances, indeed, those of their friends who were watching them during their illness knew nothing about it. I found, also, in some of these cases, that when the difficulty was removed, the urine passing gave rise to a feeling of soreness in the urethra. In all these cases the actual quantity of urine so detained was very small. This condition of the urine only once lasted more than twenty-four hours, nor did it follow that because one act of micturition was attended with difficulty or pain each succeeding act would be so. It was quite uncertain, and the patient having no pain or uneasiness between times, could not tell herself whether she could or could not pass her water as usual. I have no idea at all why more women than men should have suffered in this way, nor do I think that age or colour had anything to do with it. White and black were equally attacked, and all were below forty-five; in all the catamenia had been regular. I may mention that irregularity of the menses is very rare in black women; I am not sure that I ever saw a case. In ten cases (seven women and three men) there was

subsultus; all were delirious at the time. The subsultus was so violent that the patients were quite unable to use their hands, and there was some trouble in feeding them, as they wanted to help themselves very much, and spilt their food and medicine, and being deaf as well as delirious, it was very difficult to get them to understand what I wished them to do. Of these ten four died, one being the fatal case with difficulty in passing urine. I found that of all delirious cases the whites were much the most unmanageable. Generally speaking, the blacks became quiet at once when desired, but made many objections to the taste of quinine. In forty-three cases there was great deafness from the very first, quite independent of any delirium. In one case I was obliged to write on a slate for a few days the questions I had to ask. For the first month of the epidemic all the cases that were attacked had a slow and very weak pulse, generally about 50. The treatment I adopted was very simple: quinine, in two-grain doses, three times a day, for adults, from the time I was sure of the disease; for children, half that quantity. Aperients were generally necessary, and castor oil answered well. Sometimes, when the thirst was very urgent, I ordered a seidlitz powder instead, but I found that its action was uncertain, very frequently not acting at all, though they were always grateful to the patient. Opium, in one or other of its forms, was very frequently necessary to procure sleep. In one case in which it always disagreed I gave three grains of the extract of hyoscyamus at night, which put a stop to the restlessness, though without procuring much sleep. For the inability to pass water I used no special internal remedies. I found that no treatment relieved the subsultus in any degree, and I at first tried everything I could think of, except shaving and blistering the head and neck; but as I had seen that done in the fever hospital in Cape Town, and did not find that any good resulted, I did not try it. Wine and brandy, more particularly the latter, I did not use, unless it was absolutely necessary. The remedies I relied on most were:—

1st. Quinine regularly given, without reference to any head symptoms that might be present, and as the tendency was always to constipation, I never gave it with dilute sulphuric acid.

2nd. Strong beef-tea, given in spoonfuls every half hour; when I could rely on the attendants, in larger quantities, and not so frequently when I could not. Sponging the body with tepid water and vinegar in the evening gave great relief, and refreshed the patients so much that they slept afterwards.

Now, from the twenty deaths in Simons Town, there are some, I think, that may be deducted as not having died of fever alone, though they had fever at the time they died. Four (one man and three women) were dying when first I saw them, having been found by the police lying in the bush without house, shelter, or food, and, of course, exposed to the weather; they were at once removed to the jail, as paupers, for hospital treatment. They were in such a wretched state that nothing could be made out of them at all as to their illness, and it was with great difficulty they could be got to swallow wine or anything else. The contents of their bowels and bladder passed under them. One man, a white, while delirious, managed to evade his watcher, and hung himself in his garden. Another, a prisoner, was, by orders received from the Colonial Office, removed from the jail to the hospital in Cape Town, and though doing very well at the time he started, unluckily died about a week after in the hospital, as far as I could ascertain from a relapse. He was sent away because the Colonial Government were anxious that all pauper fever patients should be sent up to the hospital for fear of the prisoners being infected. Some of the prisoners were afterwards attacked, and several more paupers were taken into the jail, but I kept them there till they died or were discharged well. One Kaffir, while delirious, escaped one morning early from his countrymen, and was found next day, naked, under a bush, at the foot of the waterfall, where he had been since his escape. Of the remaining thirteen, one Malay man was sixty. He had been living with his two sons in a small room; both the sons were attacked, and, having no relations, he stayed and nursed them through the whole illness, watching them most carefully night and day, hardly ever leaving the room: they both recovered. One black man was seventy, and a black woman seventy-two. I mention these three cases, as from their age I had very little hope of them from the first. They each ran steadily down from the time they were attacked, and I do not think that they can be considered as any test of treatment. That leaves eleven, who, while in good health and strength, living in fair-sized houses, and with plenty of nourishment at the time of their being attacked, died in spite of my utmost efforts.

Now, during the whole time, I had no hospital, though it was proposed by the inhabitants that some place should be hired for that purpose, so that all the blacks could be removed there as soon as they were taken ill. No doubt, as I would have had responsible

attendants, they would have had more skilful nursing; but, on the other hand, there would have been a considerable number of cases collected in a building which was not adapted for a hospital, either as to ventilation, or the water supply, or latrines, and I cannot help thinking, for these reasons, that the fever would have been very likely to take on a more intense form, and thereby diminish the chance of recovery. I therefore objected, and pointed out that in the hospital in Cape Town, where everything was well arranged and at hand, the death rate was heavy; and urged, instead, that the sick should be left in their own houses, where I would see them each day. A sanitary committee was appointed, and the town divided into districts, two members to each district, as by the Cape law, during any epidemic. Two members of a sanitary committee going together have the power to enter any house and examine the inhabitants and building, and if the latter be dirty and the tenants unable to clean it, the committee have the power to have it cleaned and whitewashed at the landlord's expense. This was put in force, and in districts which were inhabited by the blacks, Malays, and poorer class of whites, a daily house to house visitation was made, and each fresh case, or suspicious case, was reported to me by nine o'clock in the morning. This saved me a great deal of trouble, as I always visited each district in order, and knew where to go in case the people of the house might not see me pass. As the blacks did not like this visitation by non-professional men at all, and looked at it as impertinent meddling, they very often contrived to hide patients from the visitors, but then they looked out for me. By this means the whole town was looked after well, and I am sure that I saw every case that occurred. In ordering wine or brandy I used to give the patient a ticket on which I marked what and how much they were to get, and then signed it, giving a fresh one each day when required. I also adopted the same plan with the beef-tea. The visitors of each district received these tickets, and gave what I had ordered, the expenses being borne by a relief subscription. The quinine I used was to a large extent given to me for the poor, and the offertory fund of the parish paid for the rest.

Lastly, though I have said the fever was mainly typhus, I decline to give a positive opinion on that point, because the great majority of the sick being coloured it was impossible to see any petechiæ, even if they existed, so that I could only judge by the general resemblance of the other symptoms to typhus fever.

Art. VII.—*Some Practical Remarks on Insolation; being a Thesis for the Degree of M.D. in the University of Dublin, Michaelmas Term*, 1868. By William Nolan, A.B. and M.D., Univ. Dub.; Assistant Surgeon, Bombay Army.    1868.

Among the different affections which are met in the tropics, insolation holds an important position—few requiring more care and discrimination in their management.

As the disease proves so frequently fatal, and often constitutes a considerable loss of strength in our army on foreign service, every opportunity of inquiry into its pathology should be sought after by the military surgeon.

In stations in India, where the duties are light, cases of sunstroke are by no means of frequent occurrence, so much improvement has been effected of late in everything connected with the soldier's comfort.

In time of war, however, on the occasion of hurried marches, or hard labour in strategical operations, the affection is very prevalent; and from observations recorded under such circumstances, where we can exclude a good many supposed causes, a correct knowledge of the subject will most probably be derived.

To enumerate all the supposed causes of, and conditions under which sunstroke occurs in the different tropical stations where our troops are serving, would be foreign to the present purpose. It will be sufficient to mention the most common, and those which have been noticed to be present in the cases forming the subject-matter of this thesis.

The first and commonest atmospheric condition is that of elevation of temperature, ranges of from 104° to 120° and 125° Fah. in the shade, being by no means unusual in many of our foreign stations for a month at a time. The disease is rarely epidemic at a temperature below 102°. Isolated instances occur at all times irrespective of the degree of solar heat; but, as a rule, the victims are those who were previously in enfeebled health, or who had not taken the precaution to adopt a suitable head-dress.

The sultry state of the atmosphere which precedes the monsoon in the tropics is very favourable to the production of insolation; direct exposure under these circumstances not being required. Many people are attacked in their houses at this period who have not been out of doors for several days previously. This, and the

fact of cases occurring when the sun and sky are clouded for weeks together, show that we must look for some cause of the disease other than the solar rays themselves.

A connexion between sunstroke and the existence in the air of gases the product of decomposition of animal or vegetable matter, is very frequently noticed; and from returns, there is no doubt but that where sanitary measures are properly carried out the disease is less common than where the opposite state of things exists.

During the prevalence, also, of the hot land-winds in India, especially those blowing from the north-west, the greater number of cases are, as a rule, seen. The air, heated in its passage over the burning sands of the deserts in its course, produces derangement of the skin's action in one or two ways.

In some cases we see the symptoms brought on by the heated air cooling by evaporation the moist surface of the body, and this process going on too long, perspiration stops altogether, and the important function of eliminating its excess of water from the blood is thus transferred to other organs which are not capable of doing this sufficiently quickly.

When there is heat without motion of the air, perspiration goes on too fast; and the blood, parting with its watery elements quicker than these are supplied from without, becomes inspissated and unfitted for circulation.

A very dry atmosphere, without at the same time unusually great heat or motion, from its parching effect on the skin, brings about a very irritable condition, which is frequently the forerunner of the disease for days before its development is complete.

The predisposing causes acting primarily on the system would seem to be an enfeebled state of body, with nervous depression, brought about, in most cases, by repeated attacks of malarial fever, or the existence of debilitating discharges.

Absence of sleep, whether rendered necessary by reason of occupation, or arising from that excitement so commonly felt in the tropics after unusual heat, brings about a state very favourable to the production of insolation. Extreme irritability, almost approaching delirium, being, in many cases, brought about by it.

Chronic alcoholism, from the nervous depression accompanying this state, has always been looked on as one of the most predisposing conditions; but on service it hardly ever constitutes a cause, the absence of stimulants in small quantities, and well diluted with water, being probably a much greater one.

Intermittent and remittent fever, either during their periods of incubation, intermission, or remission, from their often constituting a great proportion of the causes of sickness in the tropics, furnish a condition of the system especially favourable to the development of sunstroke. Indeed, so often do we observe the one turning into, or alternating with the other, we are inclined to think that the two affections are identical, or, in other words, that sunstroke is only an aggravated form of ague. The resemblance, however, is only one of which we have numerous examples, as malarial poison stamps with its own mark, and gives its peculiar features to nearly every tropical disease. It might be urged, in the same way, that dysentery, so common in the tropics, was but an aggravated symptom of ague, so frequently is it seen in connexion with it; but both it and sunstroke are familiar examples of disease, losing their distinctive features, owing to their being engrafted on and incorporated with the malarial diathesis.

If the germs of malarial fever exist in the body, the accession of any other local or general disease is sure to develope them, the complication aggravating the secondary disease.

To distinguish sunstroke from malarial fevers, the main points on which we rely are the suddenness of the accession of the former, the persistent body heat, as manifested by Aitken's thermometer, the normal temperature being never reached until the fifth or sixth day, when the disease is declining, the early coma and stertor, the upturned eye, and the contracted pupil.

Suddenness of accession does not hold good in all cases of sunstroke, as a very common form of it comes on gradually. Here the thermometer, indicating a temperature of from 102° to 105°, and not the gradual increase, until the maximum is obtained, as we see in ague, must, in connexion with the cerebral symptoms, be our guide.

In practice we meet the following varieties, each differing from the other in important points.

First may be described a form characterized by its suddenness of accession and abruptly fatal termination, and to which the term "sunstroke" is particularly applicable. When it is seen there is generally no opportunity of our being able to do anything to save the patient, the power of swallowing being speedily lost, rendering the administration of medicine by the mouth hazardous, from the danger of bringing on suffocation; and though in a great many instances powerful stimulants, in the form of enema, have been administered, a fatal termination is the rule.

We generally find, in a case of this sort, that the patient who but a few minutes previously had been engaged in conversation with his companions, had suddenly fallen to the ground as if stunned; his respiration had become hurried; and that, after a few minutes, he had lapsed into a state of insensibility.

This variety usually occurs in the afternoon at about three or four o'clock; rarely before midday. *Post mortem* examination shows a congested state of the lungs, in some cases amounting to blackness, though instances are known in which neither this nor any other lesion existed which would explain the cause of death. Cadaveric rigidity is very strongly marked, and great heat of body remains for a considerable time after death.

The second form is characterized by its premonitory symptoms, its comparative slowness of accession, and its long duration. It is preceded by a state of weariness and sense of exhaustion, with frequent sighing, and a desire to sleep. A dull aching pain in the occiput, and throbbing of the temples, usher in delirium, the patient's raving being usually the first thing that draws attention to his condition. This variety occurs principally at night time. Noises in the ears, fulness of the head, and a sensation of constriction of the thorax are complained of. The pulse is full and bounding, and the surface heat is intense.

There is a great tendency to periodicity in this form long after the patient has been removed from the exciting cause, in those who have previously had some type of malarial fever, the sunstroke element of the disease becoming gradually less distinct.

The third is the convulsive form. Like the second, it has its premonitory stage; but, instead of symptoms of depression, it is marked by those of extreme irritability. This variety usually arises from exposure of the neck and shoulders for some time to the sun. The skin becomes dry and scaly, and afterwards painful and inflamed, thereby giving rise to an eccentric source of irritation, which, being conveyed to the spinal chord by the excito-motor nerves, convulsions are developed as its expression.

Two other varieties remain to be described, not so distinct, however, as the foregoing, but rather divisions of the first form, in which, owing to the patient surviving some time, we can observe the symptoms.

The first that may be mentioned is that in which pulmonary congestion, with delirium, presents itself. This state comes on generally very suddenly. The surface of the body and the

extremities are cold, but the thermometer in the axilla shows an increase of temperature in proportion to the extent to which the lungs are implicated. The degrees of severity vary from slight congestion to intense engorgement, with blood of the pulmonary substance.

In the next variety the cerebral symptoms predominate. In it we find that pinky colour of the conjunctiva so often referred to as diagnostic of sunstroke; the pupils are usually contracted, the surface of the body cold and moist, respiration slow and stertorous; there is an inability to be roused, and the general appearance, in the absence of other evidence, would suggest that the patient had been stunned. If recovery take place, partial or general paralysis and chronic headache, with not unfrequently insanity, are developed as sequelæ.

In point of frequency the foregoing varieties occur in the following order, viz.:—

The suddenly fatal, the pulmonary congestive, the cerebral congestive, the convulsive, and the gradually approaching form.

If, then, we would treat sunstroke with any prospect of success, we must keep in mind the different varieties that may occur.

In the sudden form, our first object is the removal of the patient to a place of shelter from the direct rays of the sun, and the immediate opening of any tight portions of the dress. If the man be a soldier fully accoutred, as is often the case, we will find that the multiplicity of straps with which his chest is covered has prevented its due expansion, and that the removal of these is followed by relief, the pressure being taken off the heart and great vessels of the neck. Then cold water, if it can be obtained, is to be repeatedly dashed over the face and shoulders, and this is to be continued for a considerable time, unless contra-indicated by pallor and coldness of the surface. If this state come on, we must not continue the douche, but rather take measures to promote warmth, and this is best effected by rubbing the surface of the body with brandy or turpentine and warm water, the only remedies, as a rule, at hand under the circumstances. Artificial respiration, as in the case of the apparently drowned, should always be tried. The upright position is to be maintained as much as possible, and the patient roused by keeping him in motion. If he can swallow, brandy and ammonia, with warm water, must be freely administered. Stimulant enemas may also be tried. *A mustard emetic,*

at the commencement, if it can be given with safety, is a most valuable remedy.

In the second form, an ipecacuanha emetic, followed by a brisk purgative of calomel and jalap, will generally be found useful, rest being enjoined, and cold lotions applied to the head. Stimulants should not be given. Leeches to the temples are followed by relief of the head symptoms, and this is the only form of sunstroke in which blood-letting is not contra-indicated.

In the convulsive form most benefit is derived from the *inhalation of chloroform*, guarding, however, against producing insensibility. Those parts of the body which have been exposed to the sun should be sponged with warm water, and any emolient ointment, such as the unguentum cetacci, may be applied. A full opiate should be administered, our object here being to promote sleep, and to keep the patient tranquil.

In that form, characterized by great oppression of breathing, with coldness of the extremities, the application of sinapisms to the soles of the feet and to the surface of the chest relieve the congestion, or cloths wrung out of hot water and turpentine may be wrapped round the chest, repeating these at intervals of twenty minutes or half an hour. Turpentine and brandy in warm water, in the form of punch, given internally at the same time, are useful. Blood-letting, on the principle of relieving the congested state of the lungs, has, from experience, been found inadmissible—this form resembling, to a great extent, the asthenic type of pneumonia.

In the last variety, and that which I regard as the most formidable, means which tend to prevent the effusion of serum into the ventricles of the brain must be adopted. In order to effect this, the head should be shaved, and the acetum lyttæ applied to the scalp. Calomel should be pushed to salivation, or until amelioration of the symptoms commences, stimulants and cold effusion being inadmissible.

To prevent the occurrence of sunstroke, those exposed by the nature of their occupation to the solar rays should be directed to keep their hair continually moist, to wear a head-dress, if possible, which will admit of being soaked in water, and which will retain it, or a wet handkerchief under the ordinary solar helmets will have an equally good effect. Alcoholic stimulants, if taken well diluted with water, and in moderation, are decidedly beneficial, the system, unaided, not being able to recover itself sufficiently rapidly without

these, from the depression which excessive perspiration and long exposure to the sun tend to produce.

In Abyssinia the natives wear lumps of butter on their heads, which, melting by the heat of the sun, lubricates the neck and shoulders; and as head-dresses are seldom worn by them, apart from their being acclimatized, it must be a protection. The oil prevents the drying up of the skin, and is at the same time an artificial source of moisture when the blood, having been deprived of its watery constituents, ceases to maintain the supply to the skin. The convulsive form of the disease may, at least, be avoided by this precaution.

It is satisfactory to see how much less frequently sunstroke occurs now among our troops serving abroad than was the case some years since. Accounts of long marches, unnecessarily made during the day by men fully accoutred, and with the usual result, being now happily rare, the exigencies of war at the present day alone justifying such proceedings.

The preceding remarks constitute an outline of the disease and the treatment adopted in it by me when in medical charge of over 1,000 men, engaged in the arduous task of constructing the Abyssinian railway between Zoulla and Komaylee, under a temperature and tropical sun scarcely to be equalled in the habitable world, and where a large number of cases occurred. In nearly every uncomplicated instance, when the treatment could be commenced early, recovery was the rule. I have accordingly deemed the notes taken hurriedly at the time worth collecting, and making the subject of my thesis.—*Hyderabad, October*, 1868.

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ART. VIII.—*On the Treatment of Granular Ophthalmia and Pannus by Inoculation.* By J. G. HILDIGE, F.R.C.S.I.; Surgeon to the National Eye and Ear Hospital.

THE following cases, treated at the National Eye and Ear Hospital, show the efficacy of inoculation as a remedy for the cure of the above diseases, when all other means had proved unavailing.

CASE I.—Ellen B., aged seventeen, of a healthy and tolerably strong appearance, applied for medical advice under the following circumstances. She stated that when she was four years of age her

eyes commenced to be affected, and ever since that time, during a period of thirteen years, she had been almost continually under medical treatment, her sight being occasionally so bad that she was obliged to be led about. On examination I found the cornea of each eye extremely vascular, and so opaque that it was with difficulty she could discern large objects placed near her. The mucous lining of the upper eyelids was covered with granulations and much thickened; it also showed signs of long-continued treatment. She suffered considerably from pain in the eyeballs and temples, which from time to time became so severe, particularly at night, that sleep was completely banished from her pillow. As the usual remedies were followed only by temporary improvement, and as she had been suffering so long from the disease, I resolved to have recourse to inoculation, a remedy which I had seen elsewhere employed with the best possible results, and which was not contra-indicated in this case. The pus was taken from the eye of an infant suffering from acute purulent ophthalmia, and was introduced by means of a camel hair-brush between the girl's eyelids. After the expiration of twenty-four hours considerable irritation, accompanied by pain, set in, and at the end of forty-eight hours both eyes were suffering from an acute attack of purulent ophthalmia. Active antiphlogistic treatment was employed, the disease ran a favourable course, and at the end of fourteen days the inflammatory symptoms had subsided, leaving both corneæ perfectly sound, and showing indications of commencing improvement. Three weeks later both corneæ had become so transparent that the patient could read large type; and at present, four months from the day of inoculation, her eyes are perfectly sound, and her sight so good that she can read small type and see distant objects more distinctly than ever she remembers to have done in her life.

Case II.—Eliza S., aged fifteen, apparently of a healthy and strong constitution. She had suffered from granular lids and pannus of right eye for a period of three years, during the greater portion of which time she had been under medical treatment. The cartilage of the upper eyelid was hypertrophied, and its mucous lining, which was covered with granulations, was much thickened and altered in structure. The cornea was vascular and opaque, so that the eye was almost useless to her. The left eye presented no trace of disease, but the sight of it had become much impaired from sympathetic irritation. This patient was inoculated at the

same time as the preceding one, the left eye having been previously bandaged; and after a period of three days acute purulent ophthalmia, accompanied by considerable constitutional irritation, set in. The disease ran its course in about fourteen days, leaving the cornea perfectly sound; and at the end of ten weeks she could read ordinary-sized type with ease and see distant objects.

CASE III.—Mrs. B., aged forty-five, of a somewhat delicate appearance. She had suffered from granular lids for several years; both corneæ were, however, perfectly transparent. Her sight was extremely bad, owing to a lesion of the retina which had existed for some time, and which was slowly progressing. She was inoculated with pus taken from a patient suffering from blenorrhea. A slight attack of purulent inflammation followed after a period of forty-eight hours. At the end of three weeks the attack had passed away, destroying every trace of granulations, and leaving both corneæ intact.

CASE IV.—John B., aged ten, of a strong and healthy appearance. He had suffered for six months from granular ophthalmia, complicated with hypertrophy and ectropium of the eyelids of both eyes. The corneæ were perfectly transparent. Not wishing to resort to inoculation before making a trial of other remedies, I excised a portion of the diseased membrane from the internal surface of each lid, and afterwards cauterized the parts with the solid nitrate of silver, a pad and bandage being placed on each eye in order to retain the parts *in situ*. This mode of treatment was continued for some time, but was not attended with any permanent benefit, so that I determined to treat the case by inoculation. A severe attack of purulent ophthalmia followed the application of the pus; it yielded readily, however, to treatment, so that at the end of ten weeks every vestige of the disease had disappeared, the ectropium being completely removed and the boy's vision excellent.

I have treated other cases of opacity by this means, and with the same beneficial results; and I consider that it may be safely resorted to in every case of granular ophthalmia, except when it is contra-indicated by a strumous or syphilitic diathesis, in which cases diphtheritic inflammation would be the inevitable result.

ART. IX.—*Contributions to Operative Surgery.* By RICHARD HARRIS, M.R.C.S., Eng. ; Surgeon to Newcastle Hospital, New South Wales.

CASE I.—*Ovariotomy with Free Fecal Discharge from Wound— Recovery.*

MISS S., aged twenty-three, had been tapped twice during the past three months for ovarian dropsy; upwards of twenty quarts of fluid drawn off. Placed herself under my care July 13th, 1868.

The abdomen was then enormously distended, concealing a large tumour on the left side. She had enjoyed good health up to the period of her arrival in this colony, three years since. She then felt, for the first time, a small tumour in her left side, which at first increased slowly, but afterwards became enormously enlarged by what she described as another tumour growing out of the former, and extending towards the right side. Her general health continued to be good, but her body was wasting rapidly.

From the great distention of the abdomen it was impossible to ascertain the nature, size, or attachments of the tumour.

The operation of tapping was again performed, and eleven quarts of dark gelatinous fluid was drawn off. It was then ascertained that the tumour, a multilocular one, arose from the left ovary, and was attached to it by a pedicle about three inches long, and extended upwards for about twelve inches, as far as the diaphragm would permit. The tumour was movable; the uterus and its other appendages healthy.

On the 18th the operation was performed in the Newcastle Hospital. The patient having been placed under the influence of chloroform, an incision was made in the linea alba, extending from within an inch of the umbilicus, to about the same distance from the pubes. The dissection was carefully made; all arteries secured as the operation proceeded. The peritoneum was hooked up, and opened by passing the knife along a director. The hand was then passed into the abdomen, and examination made as to its attachments, and the feasibility of proceeding with the operation considered. The tumour was found adhering extensively to the surrounding parts, all of which adhesions, with the exception of two, were easily broken down with the hand; the other two at length gave way without any important blood vessel having been injured. The tumour was found to be much too large for extraction,

the wound was therefore extended two inches; being still too large it was found to be necessary to tap two of the cysts and take away about three quarts of fluid. The only mishap which occurred during the operation was, at this time, the person holding the vessel to catch the fluid pushed it too rudely against the canula, and knocked it out of the tumour, in consequence of which a quantity of the fluid escaped into the abdomen.

The tumour thus reduced in size was turned out, and was still as large as a full grown baby. The pedicle was found to be about three inches long, and about one and a-half inches in diameter, springing from the left ovary, which was itself so much enlarged as to require removal. A needle bearing a double thread of silk was passed through the pedicle below the ovary, and tied on each side; to ensure safety a second ligature was tied around the entire pedicle, the tumour removed close to the ligature, and the stump dropped into the pelvis. All fluid was then carefully removed from amongst the intestines with sponges, and the wound closed by six deep stitches, which took in the peritoneum, superficial stitches being inserted every half inch; cold water dressing secured with a flannel, many tailed bandage, &c.

For twenty-four hours after the operation the depression was extreme, being aggravated by constant vomiting. The vomiting was at length subdued by the free use of champagne, creasote, opium, &c.

20th.—Slight re-action; vomiting had almost ceased; citrate of ammonia for drink; beef-tea enema at intervals; no pain, tenderness, or heat in wound; towards night, violent spasm in stomach; forty drops tincture opium; spent a good night.

21st.—Has retained beef-tea, arrowroot, wine, &c., during the night.

22nd.—Great restlessness; no pain; passes water freely; vagina much inflamed; spasm of stomach returned.

23rd.—Good night; wishes for food; skin cool; pulse steady, at 80; feels comfortable; no pain or soreness in the abdomen; slept well during the day; 10 p.m., a slight circumscribed swelling on the pubes.

24th.—Has had a restless night; deep stitches removed; vomiting returned; bowels relieved; no sleep; forty gts. tincture opium, per anum, without effect; very restless; catheter used.

25th.—No sleep; bowels opened twice during the night; 25 gts. tincture opium per anum; 40 gts. chlorodyne; 10 gr. cit. of iron and

quinine every four hours; wound looks well, showing only a moist line in its track. 10 p.m., lower end of wound inflaming.

26th.—Good night; free discharge from lower part of wound; 40 gts. chlorodyne.

27th.—Rather better this morning; less restless; retained an egg; wound discharging from the cellular structure; swelling over the pubes gone.

30th.—No sleep; wound discharging freely; stomach very irritable; superficial sutures removed; wound dressed with adhesive plaster.

August 1st.—Progressing favourably; bowels irritable; wound open its full extent, and discharging freely.

2nd.—Bad night; stomach irritable; constant spasm of stomach; 40 gts. chlorodyne rejected; 25 gts. tincture opium in enema; great flatulence; no effort at healing in the wound; edges of incision as sharp as when first made.

3rd.—Great restlessness, spasm, and irritability of stomach; acid hydrocya; gts. iv. pro re nata; solid food retained; wine and tonic rejected.

4th.—Opium enema; wound dressed with lin. lyttæ.

5th.—Leuchorrhea which usually precedes menstruation; edges of wound a little inflamed; dressed with carbolic oil; stomach still very irritable.

6th.—Free discharge of pus from vagina; upper third of wound healed; no pain or tenderness at any time in the pubic region.

8th.—Catamenia fever much less; stomach settled; appetite good.

13th.—Discharge from vagina large; irritable bladder.

14th.—Incontinence of urine; health improving.

15th.—Wound burrowing in the cellular substance.

17th.—Violent vomiting and purging; pulse 140; small and wiry, caused by improper food.

18th.—Vomiting moderated.

19th.—Retains food.

27th.—Fecal discharge from the wound near the navel; fever returned.

28th.—Fecal discharge profuse; bowels freely open.

29th.—Discharge has ceased; stomach settled much better.

31st.—A return of the discharge from the vagina; bladder very irritable.

October 4th.—Progressing favourably; general health good; wound not yet healed.

CASE II.—*Remarkable Case of Subperitoneal Fibrous Tumour.*

Mrs. S., aged thirty-three, Nullipara, had been suffering from the effects of a tumour in the left pelvic region, for the last five years. When presenting herself to me the abdomen was distended to an enormous size. Although a very slight figure, the girth of her waist was forty-nine inches, the integuments of her abdomen were stretched to a glassy smoothness, and, as neither fluid nor motion could be detected, it was quite impossible to arrive at any certain diagnosis as to its nature or attachments. The conclusion I came to was subperitoneal fibrous tumour attached to the fundus of the uterus. The tumour had been punctured twice by a former medical attendant, thereby showing its solidity; it was lifted completely out of the pelvis so as not to be touched from the vagina. The uterus was much wasted; catamenia regular; bowels much obstructed; bladder free. The pressure on the stomach was at this time so great, that the smallest quantity of food produced excruciating pain. The body was much wasted.

The patient was most importunate to be operated on, and although the nature of the operation, the great risk attending it, and the almost certainty of its failure, were fully explained to her, she still persisted, stating that her present sufferings were intolerable.

Having been placed under the influence of chloroform, an incision was made through the linea alba, when it appeared that the natural structure of the muscles was completely changed, being incorporated with the substance of the tumour, so much so that I could not tell where the junction took place. Supposing this state might have been caused by the inflammation produced by the introduction of the trocar, a careful dissection was made at either side, and either end of the incision, without being able to distinguish one structure from the other. Seeing the utter impossibility of proceeding, I dressed the wound with carbolic acid, closed it with deep and superficial stitches; lint soaked in carbolic acid placed over all. On the third day the deep stitches were removed; on the fifth there was so much strain on the superficial stitches that I removed them also; the integuments flying back to the extent of four inches.

She progressed favourably for six days, when pyemia set in; death ensued on the eleventh day (so much for carbolic acid dressing).

*Autopsy.*—The tumour was found not only to be adherent to the parietes of the abdomen, from kidney to kidney, but was intimately connected therewith; the back part of the tumour only being free, I separated it carefully from its lateral attachments, and on attempting to turn it out, found it had no further attachment either to the uterus or ovaries, having been entirely supported by its adhesions to the abdominal wall. The uterus itself was very much wasted; in fact, there was nothing left but a thin membranous substance, attached to which there were six smaller tumours, the largest about half a pound weight. The tumour, when cut into, was perfectly solid, and composed of hard granular fatty substance, similar to the brisket of the bullock. It weighed fifteen and a-half pounds.

What were its original attachments?

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ART. X.—*Notices of the Abnormalities of Serous Membranes.* By LAWSON TAIT, Member of the Surgical Society of Ireland, &c.

IN putting on record a description of some abnormalities which I have recently found in the pericardium and peritoneum, I am actuated by the consideration that in one case there existed a peculiarity of the arrangement of the peritoneum, which does not seem to have been hitherto observed, and in the other two instances the peculiarities observed confirm facts already noticed by others.

CASE I.—*Congenital Absence of the Pericardium.*—A. P., aged twenty-nine, presented an extremely anemic condition. A year before I saw her the right mamma had been removed for malignant disease, at St. Mary's Hospital, Manchester. For some months after her recovery from the operation she acted as a barmaid, and enjoyed perfect health. About seven months after the operation she began to find that on any unusual amount of exertion she became breathless, and this affection increased so rapidly that in two months more she was entirely disqualified for work. Her condition, when I saw her, indicated serious disease; and from the physical signs, I diagnosed mitral constriction, with perfect inelasticity of the valvular orifice.[a] The question occurred,

[a] Vide Med. Press and Circular, July, 1868.

Might it be malignant disease? and I was inclined to believe that
it was.   The fatal issue occurred three weeks after she came under
my care, and *post mortem* examination showed that I was right as
to the condition of the valve, but wrong as to the variety of the
disease.   The valve admitted the middle finger, and both flaps
were much ulcerated on the upper surface.   The disease was
atheromatous deposit, extending completely round the valve, and
of a very soft consistence, owing this probably to its rapid deposi-
tion.   Besides this disease two peculiarities, of a congenital
character, were found; but, to my regret, they must be recorded
imperfectly, as I was prevented by the friends of the patient from
examining anything but the heart, and from removing any part.
That which will require shortest mention is the fact that the aortic
valves consisted of only two pouches, quite healthy, and with the
*corpora arantii* but faintly marked, and a coronary artery arising
from each *sinus*.   This peculiarity is described by Meckel,
Cruveilhier, and Henle, as being very rare; variation in the
number of pouches being much more common in the pulmonary
valves than in the aortic, and increase of the number to four being
commoner than its reduction to two.   There existed, also, the
somewhat rare condition of absence of the pericardium.   On
removing the sternum and costal cartilages no peculiarity was
apparent, as I had not opened into either pleura, and a mass of
loose connective tissue seemed, as usual, to occupy the anterior
mediastinum.   When I endeavoured to pinch up the pericardium,
that I might make an incision into it, I found that I could only
get a hold of the substance of the heart.   I was under the
impression that I had made a mistake in my diagnosis, and had to
do with a case of pericarditis and consequent adhesion.   On making
an incision, almost in the middle line, I came upon a nerve, which
a slight dissection showed me to be the left phrenic.   I then slit
open the left pleura and at once exposed the lung and the left side
of the heart.   On opening the right pleura, I exposed the right
auricle and its appendage.   I was a little puzzled at first, but soon
came to the conclusion that it was a condition, the occurrence of
which I had not before been aware of, viz., absence of the
pericardium.   On the left side the parietal pleura was continued
from the vessels downwards, to about an inch from the apex, and
forwards as far as the anterior coronary artery, thence to the
cartilages.   On the right side its relation was much more limited,
being confined entirely to the auricle.   This abnormality, although

very rare, has been, at various times, noticed. A summary of the cases observed, prior to 1840, is given in an excellent paper by Mr. Curling, in the XXI. Vol. of the *Transactions of the Medico-Chirurgical Society of London*, where he describes a case with great accuracy; and I am glad to find that the few points which I observed in the above case substantially corroborates the appearances found by Mr. Curling.

Case II.—*Congenital Deficiency of all the Folds of the Peritoneum.* The following peculiarities were observed in the case of a prisoner in the West Riding House of Correction on April 28, 1868, who had died of acute leucocytosis, under the charge of my deeply lamented friend the late Mr. Milner, surgeon to that Institution. The *post mortem* was made by us in concert, and the notes, which were most carefully made, were transcribed in the Hospital case book. The pathological appearances of the case do not at all bear on the peculiarities about to be narrated, and need not be mentioned. On opening the abdomen by the usual incision, we were struck by the remarkable appearance of the intestines. They presented an exactly similar appearance to that seen when the convolutions of the brain, with the arachnoid over them, are exposed by laying open the *dura mater.* The peritoneum was perfectly transparent, free from the slightest appearance of inflammatory action, and, instead of being in relation to the whole circumference of the walls of the small intestines, and dipping down to the posterior abdominal wall to form mesenteries, it passed from one coil to another, being in relation to about a third only of the circumference, and disposed exactly as the arachnoid is to the sulci of the brain. It formed a mesentery at no point of the small intestine, nor, indeed, elsewhere. There was no appearance of the great omentum. Tracing the peritoneum, from the umbilicus upwards, I found that it left the parietes at the level of the edge of the liver, to be continued at once over the lower surface of that organ, as far as the portal fissure; and behind the vessels and duct, entering and emerging there, it turned as usual, and formed Winslow's foramen. The upper surface of the liver, and its posterior edge, had no relation whatever to the peritoneum, but were attached immediately to the diaphragm by the ordinary loose sub-peritoneal connective tissue; while the only ligament the organ had was an unusual anterior-marginal single layer of membrane, in which, however, was embedded the usual round ligament. The lesser cavity of the

sac was extremely limited in extent, and its capacity was not greater than would contain an orange. At the lower and posterior part it had relation to the head of the pancreas to the extent of about a square inch, and a still slighter connexion with the duodenum; superiorly it had a limited relation to the under surface of the liver—anteriorly it covered about one-third of the posterior wall of the stomach. From the anterior wall of the stomach the peritoneum proceeded directly to the anterior wall of the transverse colon; the gastro-colic omentum being represented by about half-an-inch of a single layer of membrane. From the colon it passed to the small intestines, being related to them as before described, and left them again to be related to the anterior abdominal wall, three inches above the fundus of the bladder. The diaphragm at no point was in actual contact with peritoneum. There was no gastro-splenic omentum, as the spleen was entirely divested of serous covering, and lay at some distance from the peritoneum, as also did the kidneys and ureters. Neither the cecum, ascending colon, descending colon, nor sigmoid flexure had any serous covering. The bladder had no relation to the peritoneum. The testicles were both in the scrotum, and had the usual tunica originalis.

In correspondence with my friend and former teacher, Prof. Cleland, on this case, he has kindly expressed his opinion regarding it as follows:—" I have thought over this very interesting case, and think that probably you had an instance of a similar sequence of events to that which I pointed out as happening, normally, in connexion with the descending colon, where a viscus, originally perfectly invested, comes to be only partially so on account of the peritoneum not being extended throughout its extent proportionally with the growth of the other parts. Or, to put it otherwise, you have an instance of the same sort of thing, as I suppose to have occurred in the case of the colon, in my abnormality" (referring to an interesting communication in the May number of " Humphrey and Turner's Journal of Anatomy and Physiology," to which I shall more particularly allude afterwards), " viz., viscera enlarging and becoming coiled within a fold of peritoneum, without the peritoneum retaining its hold of the visceral surface so intimately as to be pulled out along with it and follow its convolutions. How far you may see your way to concur in this view I cannot say; but, whatever the explanation, the case seems to have been a most curious and interesting one."

Apart from the fact that Dr. Cleland is one of our greatest authorities on questions of development, more especially of abdominal organs, his explanation is so evidently the correct one, that I have no hesitation whatever in accepting it. The only question which remains is, I think, that of the period at which the arrest of development took place. One fact, the existence of the tunica vaginalis, settles a period before which it did not happen. The perfect regularity with which organs were stripped in proportion as they were distant from the centre of the peritoneal sac, and the extent to which this was accomplished, seem to me to point to a very late fetal age, or, more probably, advanced infancy, as the period at which the abnormality originated, and in this Dr. Cleland agrees with me.

I may state that no indication of other abnormality existed in the body.

CASE III.—As bearing on Professor Cleland's communication on arrest of development of the meso-colon, I may briefly narrate a case where I met what was doubtless the same abnormality in a much less prominent form. In his case the arrest of development had either taken place at such an early period, or was so complete, that it extended throughout the meso-colon, causing the colon to make a double flexure on itself, and the aborted mesentery to form a ring which had descended over the small intestines, or through which they passed, so that they were lodged in a third and abnormal sac of peritoneum. In my case, which happened to be one in which there was a dispute whether typhoid fever existed, and in which, therefore, the cecum had to be specially examined, the following was the condition:—There was a distinct meso-colon coming close up to the cecum, the latter making a slight turn upwards, and to the left. At the lower part of this bend, the peritoneum folded to form the dexter pillar of a ring, the sinister pillar of which was formed similarly by the meso-ileum. Into this ring I could introduce four fingers, and the cavity bounded by it was of a capacity sufficient to contain an orange. In it were the vermiform appendix, part of the cecum, and about two inches of the ileum, all destitute of mesentery but invested, on one side, by serous membrane. The explanation of it is evidently that the part of the ascending colon, immediately above the cecum, continued to grow in length after the vermiform appendix and caput cecum coli had got fixed in position. The pouch would have been everted

by pulling down the vermiform appendix. To account for the pouch, we must suppose that the commencement of the ascending colon, in passing on to a lower position than the cecum, had carried with it the small extent of loose peritoneum then lying on its left, between it and the ileum; thus dragging a portion of the ileum down, and covering it and the cecum with a hood.

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ART. XI.—*Injuries of the Head.* By R. J. KINKEAD, A.B., and L.M., T.C.D., L.R.C.S.I., and L.M., Tuam, County Galway.

I. BULLET WOUND OF SCALP—RECOVERY.

II. CONGESTION AND IRRITATION OF BRAIN AFTER INJURY SIMULATING HYSTERIA.

III. LOSS OF THE GREATER PART OF THE VAULT OF THE CRANIUM —RECOVERY.

INJURIES of the head are, perhaps, the most interesting, and, at the same time, most paradoxical cases that come under a surgeon's notice.

The skull, containing, as it does, one of the great nervous centres, one leg of what has been described as the " tripod of life," has a very important office, the guardianship of the most delicate and sensitive organ in the human body.

When we consider the close connexion that subsists between the external and internal structures of the head, the complex nature of the functions performed by the brain, the exquisite regulation of pressure necessary to a due performance of its duties, and the fineness of the boundary between health and disease, the great importance and intense interest of injuries of the head are at once manifest. The wonder is how it can be injured even slightly, and serious consequences not ensue.

Yet in this the paradox consists, that in no given case from the slightest blow to the most severe injury can the surgeon predicate a certain result. The most trivial injury may be followed by death, whilst from an accident which would have been thought incompatible with life, not even a bad symptom may follow.

The variety of symptoms arising from injury of the brain substance, adds greatly to the interest of these cases.

Owing to the extensive distribution of cerebral nerves, to the fact that from origin to final extremity, each nerve-fibre is a complete

separate existence, commencing from no parent trunk, although, perhaps, joining with others, to form what is usually called a nerve, keeping distinct its own individuality, transmitting direct to the brain each sensation, and being reacted on by the brain in turn, a thorough knowledge of the anatomy of the nervous system is absolutely necessary.

The exact local origin, what portion, what " tract " of the brain, each nerve springs from, its course and relations, what branches it gives off, to what parts, to what organs it is distributed, where are its ultimate terminations, what its character, its vocation, whether motor or sensitive, what symptoms would be likely to follow evil at its origin, or irritation at its extremity, must be known, and known thoroughly, in order to treat such affections skilfully. To form a correct diagnosis is, in many cases, most difficult; no class of disease is so easily similated as the nervous, and, again, the most opposite causes will frequently produce the same effects. Too great pressure and too little, will give rise to similar symptoms, and those too the salient ones. Depressed bone, extravasated fluid, a foreign body in the brain, may occasion convulsions, coma, and stertorous breathing. Hindrance or obstruction of the cerebral circulation may have a similar effect.

I may be pardoned if wandering from the subject. I relate a case that occurred in my own practice, a couple of years ago, which illustrates the foregoing statement, and also points out that we should not form our diagnosis from one or two symptoms, but from all the circumstances of the case, as well as from the signs of the disease. I believe there is no better plan of making a true diagnosis, and at the same time educating the memory, than in every case marshalling before the mind, all the diseases or injuries that might give rise to the symptoms present, and then examining each one to show cause why it is not the offender.

I was summoned one day in a great hurry to see an old lady who had been " seized with a fit " (she had had " a stroke " of paralysis about three years previously). I found her on her bed perfectly unconscious. I pinched her arm, pulled the hair on the temples; no sign of feeling was shown; the pupils were insensible to the stimulus of light, the breathing stertorous, the surface of the body was cold, the pulse feeble and fluttering, no signs of congestion about the head, on the contrary it was paler. I ventured to hazard the opinion that she was not suffering from apoplexy (which was the notion previously entertained), and was laughed at; however, I applied mustard

blisters to nape of neck, stomach, over the region of the heart, inside of thighs, and hot bottles to the feet. After a time, seeing an inclination to vomit, I had the patient turned on her side. She discharged the contents of her stomach and a large quantity of wind, and presently revived. I am happy to be able to state that she is alive, and in good health, at the present date. She had eaten an apple; her mastication being bad, the apple, instead of being digested, stayed in her stomach, and generated wind; the inflated stomach impeded the heart's not over strong action, diminished the supply of blood to the brain, and hence those symptoms which so closely resembled pressure on the brain.

The following cases need no apology for being laid before the notice of the profession. Two of them, at least, possess considerable interest; one I believe to be unique; another is not out of the run of ordinary wounds of the scalp, but helps to illustrate the uncertainty of issue that attends injuries of the head.

On the 27th of March, a Colt's revolver was fired at the yard-door of an empty house from the top window of the next one. The window was distant from the door about fifty yards.

The ball passing through the door, which was half inch thick, took effect in the head of a man, who happened to pass at the moment the pistol was discharged; he was, when struck, one and a-half yard distant from the door.

The ball entered a little above, and posterior to the junction of the occipital, parietal, and temporal bones on the right side, in which position I felt it quite distinctly, lying against the skull.

Having cut down and extracted the bullet (which, by the way, was perfectly flattened), there was some smart hemorrhage from a small artery. Not being able to pass a ligature round it without enlarging the wound more than I cared to, I determined to use acupressure in order to stop the bleeding (which was active enough); whilst waiting for a needle I passed the point of a tenaculum either through or as near to the bleeding vessel as possible, compressing it sufficiently against the scalp, to stop the flow of blood. On withdrawing the instrument (after about five minutes), there was no return of the bleeding. The wound united by the first intention. About ten days after the injury a little pus was discharged, occasioned by a slight exfoliation of the bone. The man recovered without a single bad symptom. The short time pressure of the tenaculum was used, being sufficient to arrest the hemorrhage, is

worthy of notice. The calibre of the artery, judging from the jet of blood, was about that of a crow-quill.

I was asked on the 15th of October to go see a girl, aged nineteen, who had been beaten the day before. I received the following history of the occurrence. The house had been attacked, set on fire, &c., a few days previously. On the evening of the 14th of October, between six and seven p.m., the girl went out to keep watch about the place whilst her master and mistress were at tea, taking for her defence an old court sword, set in a heavy wooden handle. In the avenue she was met by a man, who first hit her over the left eye, and then wrenching the sword from her, struck her over the head with the handle, knocking her senseless against a wall. She could not say how long she remained in that condition, but on recovering her senses the man was gone. She walked into the house, was brought to town, a distance of a mile, and then by the police to the magistrate's house, about another mile out of town. She gave her informations before the magistrate in a very clear and intelligent manner. She had been in her present situation two years, with her master's son-in-law for three years previously, during which time she had never been ill or complained of any sickness or pain save toothache. Had menstruated regularly for some time; had been " unwell " about a week or ten days before she was beaten.

She had a mark over left eye; a blow struck with the side-face towards the striker, would be likely to cause such a wound. It resembled more the blow of a stone than of a fist. There was also a slight swelling on the top and posterior portion of left side of scalp; very great tenderness on pressure; very great pain at epigastrium, with excessive tenderness; face flushed; tongue foul and dry; pulse slow and feeble; pupils quite even and act readily; no squinting; slight headache; intellect clear.

Sudden spasms come on about every ten minutes; a gasping cry; hands suddenly clasped; eyes tightly shut; angles of mouth drawn down; body slightly arched forward, and shake so violently that the very bed vibrates; after about half a minute or so hands slowly unclasp; body first arches back and then sinks on bed; a sighing expiration, and the fit is over for the present. She says that the gasping cry is occasioned by agonizing pain, shooting from ensiform cartilage to spine, which seizes her just as the fit begins; complains greatly of her heart, and a difficulty of swallowing.

16th.—Face more flushed and anxious; bowels not moved; pulse slow and full; tongue covered with a white fur; passed no

water since morning of 15th. In the evening, as no water had been passed for thirty-six hours, introduced a catheter, and drew off a small quantity of high-coloured urine; spasms every five minutes; heart's action tumultuous. Tr. digitalis mx. tertiis in horis.

17th.—Has not slept; mind wandering; on passing the catheter, although the urine at first flowed slowly through it after about a wine glassful passed, had to make considerable pressure on the abdomen to get the rest to run though the instrument; drew off about a pint; colour rather high; smell heavy; blister (mustard) to back of neck.

18th.—Better for a few hours, but got worse towards evening.

20th.—Passed a bad night; raved considerably; spasms continuing to recur every five minutes; great pain and tenderness at epigastrium; urine scanty; high-coloured; specific gravity, 1.018; tongue clearing; ordered blister to back of neck.

21st.—Something easier; blister not applied; tongue clean; spasms as violent as ever; blister to back of neck; leeches behind ears; is apparently salivated, although she got no mercury, save two doses of calomel and jalap, both of which operated.

22nd.—Slightly better.

23rd.—Much worse; raving more; tried several times during the night to throw herself out of bed; saw "things creeping on the wall;" blister back of head; and large dose of magnesia sulphas.

24th.—Better; spasms less in number; continue salts.

From this date she gradually got better, losing by degrees a confused giddy feel, and slight headache, which annoyed her for some time after her convalescence.

*Treatment.*—At first anti-spasmodics, cold lotions to head, and purgatives; then blisters to head; leeches and purgatives; all through, beef-tea.

There is, indeed, an intense interest in following a track through a maze of fallacy, a keen sense of enjoyment in the intellectual struggle, when all the powers of the mind are on the stretch to distinguish facts from fancies, truth from falsehood; and. although, where the witnesses, so to speak, for a comparatively harmless affection, and a grave disease threatening life, are in many cases nearly identical, there is a sense of weighty responsibility; the knowledge that on the correct decision hangs, humanly speaking, the future welfare, nay, in many instances, the life itself of the patient, this knowledge, I say, and this very responsibility, gives an independent self-reliant feeling, a sense of power that

amply repays the care and anxiety it exacts from us, and when, with God's blessing, we have decided rightly, and rescued a fellow-creature from death, a human being from a life of suffering, we have our reward, in a sense of happiness, an exquisite exultation, that I believe members of no other profession can feel.

This case seems to me of much interest. The slight signs of external injury, the serious nature of the symptoms, then the very peculiarity of the symptoms making the case doubtful at first, but when thought over, examined and sifted in the mind, gradually unfolding, dispelling doubts, and finally making the diagnosis more convincing, from the victory over the very misgivings they had at first started.

I was at first inclined to believe the case to be a purely " nervous " one, that the fright of the attack and beating acting on a mind, already agitated by former excitements, had given a severe shock to the nervous system. The usual symptoms of intracranial mischief were absent. There was no active delirium, no severe and constant headache, no squinting, no unevenness of the pupils. The pulse was slow and feeble; the pupils acted on the stimulus of light. There were no ordinary convulsions, nothing but the spasms, the intense pain from ensiform cartilage to spine, and the gasping cry when the fit was coming on. The next day hysteria came into the field of probabilities; but that evening and the following day routed that idea. The mind began to wander; the persons she had been daily in the habit of seeing were not known. She talked a little at times to herself; the fits were quite as bad when she was left alone; the urine was not hysterical, it was scanty, and of high colour. There appeared to be a total loss of power in the bladder; so much so that it required considerable pressure on the lower part of the abdomen to expel the water. After careful consideration and study, I came to the conclusion that she was suffering from congestion and irritation affecting chiefly the cerebellum, but slightly implicating the cerebrum also.

The spasms chiefly confined to the muscles, supplied by the pneumogastric. The remarkable slowness of the pulse, a slowness in speaking as if a want of power to articulate, was combined with a difficulty in collecting and arranging her words; the delirium resembling that of continued fever, rather than of active inflammation, and the marked improvement, following blisters to the back of head, and large doses of sulphate of magnesia, confirmed my opinion.

M. S., aged seventy, unmarried, called on me *at my own house*, on the 10th of last September, to consult me about what she called a " sore head."

*History.*—Catemenia have ceased some fifteen or twenty years; enjoyed good health till about ten years ago, when, " owing to trouble," she got epileptic fits for first time. The fits recurred about once a month.

About three months before the date of the present visit, (sometime in the month of June), whilst reaching for some article on the chimney-piece, she was seized with a fit and fell into the fire, striking her head, as she fell, against the hob of the grate; the head was burnt very severely, and having applied " many sorts of plasters," and the sore not healing, she at length came to me.

When she removed a most ingenious front of her own devising and the dressings, I saw, what she called a " sore!"

The integuments covering the top of the head were entirely gone, save a small isolated portion situated on the posterior part of the right parietal bone, separated from the living coverings of the head by a line of large flabby granulations, which, encircling the skull, cut off the denuded dead bone from the live integuments; included by this line were nearly the whole of the two parietal parts of the frontal and occipital bones, the isolated portion of the scalp before alluded to, and a small piece of pericranium dry and shrivelled, closely resembling old parchment; with this exception the bones were perfectly bare, quite dry, and warm to the touch.

On the right parietal bone a fracture running parallel to the sagittal suture, and sending off a branch which crossed it, was distinctly to be seen.

The granulations bled on being touched, and exuded healthy-looking pus. There was a rather fetid odour.

Since the accident, she had not had a single bad symptom. She said " she would be all right if the head healed up, as the discharge annoyed her."

The fits had not recurred.

Tongue was red, dry, and glazed down the middle; stomach rather irritable; pulse about 90 to 95, and weak; bowels inclined to be costive; appetite tolerable. She came to my house weekly, till the 7th of November, during which time the process of separation went on gradually.

On the 17th of November I was sent for, to see her for the first time in her own house, and found that while her sister was washing

the head, it being stooped over a basin, the calvarium had glided over her face into the vessel, leaving bare the dura mater, covered with healthy looking granulations, and perforated with three or four small holes, through which the brain substance could be seen. The portion of bone which came away consists of a small piece of the frontal, almost the entire of the two parietal, and a bit of the occipital bones. It measures seven inches from before backwards, and nearly five from side to side at its broadest part. (It is now in the museum of the Adelaide Hospital).

The raw surface left exposed has healed up wonderfully, and is at present almost entirely skinned over. The tongue has become quite healthy in appearance, the pathway down the centre being gone. The pulse has fallen to about 75, and got soft and full; the appetite greatly better; and the appearance of the patient is improved. She has picked up flesh, and is able to go about the house, and is only kept in by the inclemency of the weather.

She suffered a good deal from neuralgia, whilst the bones were separating. The treatment was very simple, a weak solution of chloride of lime to the ulceration, and some pills to keep the bowels regular. After the calvarium came away, at first simple dressing, then weak citrine ointment (1 part to 8), and touching the granulations once or twice a week with nitrate of silver. Good nourishing food and exercise in the open air, whenever the weather permitted, were ordered; all stimulants were strictly forbidden.

When only a portion of the bone had separated, a distinct pulsation could be seen, but when they came away entirely, I could perceive none.

Comparing these cases we find some rather inexplicable results. In two of them the injury was very similar, the situation of the wounds on the heads being very nearly alike, viz., the posterior portion of parietal bone in one, and the upper and posterior in the other. In the one which, from the nature of the case, one would have thought the greatest violence was offered, no bad symptoms showed themselves; in the other very grave ones set in.

Can it be that the young brain is more obnoxious to inflammatory attacks, as a result of accidents, than the old? Why should the cerebellum have been implicated from a blow on the top and back part of the head?

Again, in the third case, there is an injury which *a priori* would have been judged necessarily fatal. The extensive lesion over a cavity containing so delicate an organ as the brain, complicated by a

blow, causing a fracture, the exfoliation of so large a portion of the skull, and the cicatrizing of the raw surface underneath, I believe to be unprecedented.

The entire absence from first to last of a single bad symptom.

The cure of the epilepsy of ten years duration.

A sensation of lightness and giddines which was felt after the bones came away, disappearing as the wound healed, owing to the contraction of the cicatrix, compensating for any pressure that may have been lost, is worthy of remark.

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Art. XII.—*American Contributions to the Study of Cutaneous Neuroses.* By H. S. Purdon, M.D., L.R.C.P.E.; Physician Belfast Dispensary for Diseases of the Skin; Assistant Physician Belfast Charitable Infirmary, &c.

*Neuroses of the Skin.*—In the early part of last year a distinguished American dermatologist, Dr. Howard F. Damon, published a monograph on " Neuroses of the Skin," which work has been favourably mentioned by Dr. Brown-Séquard.

In the introductory chapter our author informs us that neuroses of the skin are caused by peculiar conditions, either of the sensitive or of the vaso-motor nerves. The sensibility of the former may be exalted or diminished to a variable extent. Spasm and paralysis are the peculiar forms of derangement of the vaso-motor nerves.

The first disease treated of is " Dermalgia," manifested in the form of tenderness, or increased sensibility to touch, and is generally confined to a limited portion of the skin. Sometimes, however, it involves the integument of one side of the body— usually the left—or even the whole skin. " The skin is either painful to the touch only, or the pain may be spontaneous and independent of contact with any sensible object. In other instances a draught of air may be sufficient to excite this pain, or the threatened contact with any material substance. Dermalgia appears to be of two kinds as regards cause—the hysteric and rheumatic. That form which is associated with hysteria is usually confined to the left side, and is often extensive; sometimes, however, only small areas of the skin are endowed with this exquisite sensibility to external impressions. These are veritable neuralgic spots. . . . . . This irritation may have its origin

in unhealthy conditions of the uterine organs and the sympathetic troubles to which they give rise. When this hyperesthesia to touch is more general and of a severe character, it has been regarded as one of the indications of commencing myelitis, or of inflammation of the membranes of the spinal cord. There is a rheumatic form of dermalgia which is confined to a limited portion of the skin, and which is encountered frequently in practice. It consists in an excessive tenderness to the touch, and sometimes pain. When the latter symptom is present, alteration in the nutrition of the part speedily takes place. The skin often becomes red, and there is slight engorgement of its tissues. The tender spot occasionally occupies a portion of the integument supplied by filaments of some large cutaneous nerve. The disease appears to be due—for the most part, however—to a morbid condition of the sensory apparatus of the skin. . . . Dermalgia has been observed to be more frequent in those regions which are occupied by hairs or lanugo than elsewhere. The arrangement of the hairs upon the surface of the body corresponds somewhat with the general distribution of the cutaneous nerves."

The rheumatic variety of this painful affection is usually of an intermittent character—worse at night; and in course of time the nerves themselves appear to become implicated. It is often complicated with muscular pains.

In the treatment of dermalgia our author recommends the application of blisters, the linimentum ammoniæ, and belladonna. Internally hyoscyamus, combined with valerianate of zinc, and states that the efficacy of the valerianates has been confirmed by many practitioners, amongst whom Dr. Silas Durkee, of Boston, is specially mentioned. If the patient is sleepless he administers the bromide of potassium in very large doses, such as from thirty to sixty grains, at bed-time, and which, we are informed, quiets the nervous excitement of the patient, thereby insuring sleep. If the insomnia persists the hypodermic injection of morphia is recommended. Where there is much debility present the bromide of ammonium is to be preferred to the similar preparation of potassium.

Our author next treats of "Prurigo," and follows Willan's arrangement of this disease. With regard to prurigo senilis, it is stated that its chronicity must be attributed, in a considerable degree, to the depressing influence of age upon the nutrition of the skin. Pruritus of the vulva is often connected with diabetes. " Some writers think that in all cases of prurigo of the vulva the

urine should be tested for sugar;" and he quotes Marchal de Calvi in support of this view.

With regard to treatment, nux vomica and hyoscyamus, sulphur, syrup of the phosphate of iron, quinine, and strychnia, aconite and podophyllin, are recommended—the latter is considered an admirable remedy when constipation exists in plethoric individuals, as in the following formula:

> ℞. Podophyllin, gr. iv.
>      Leptandrin, gr. xvi.
>      Pulv. capsici, gr. ii.
>      Ext. cannab. Indicæ, gr. vi.
>      Div. in pil. viii.

One of the pills should be taken night and morning.

If the patient is sleepless bromide of potassium is recommended, and when the nervous system is in a state of prostration the bromide of ammonium is more suitable. I have, quite independently of Dr. Damon, tried these remedies in prurigo, as in three cases published in " Journal of Cutaneous Medicine, No. 3;" and more recently in a Paper on Prurigo, recorded in " Medical Mirror," October, 1868. I can fully endorse the favourable opinion held by Dr. Damon of the bromides. Opiates, we are told, increase the pruriginous sensations, and are contra-indicated. If anemia is present, iron especially, the tinct. ferri chlor., combined with chloride of sodium, is recommended.

Urticaria Dr. Damon looks on as a pruriginous neurosis of the skin, with an eruption of wheals; and in addition to the vascular fulness there is serous engorgement of the cellular tissue of the derma, which is produced by excessive nutrition of the cells, owing to local nervous irritation; the infiltrated serum occupies the superficial or papillary portion of the derma and the deeper layers of the epiderma. " It is rapidly absorbed into the general circulation after the more intense nervous symptoms of this affection have subsided. If the congestion has been severe or long-continued, it may be followed by a slight furfuraceous desquamation. This process is of exceedingly short duration. Some authors deny that there is any desquamation at all; but this is wholly unphilosophical. Occasionally there is a yellowish tinge left in the skin, as after other cutaneous congestions. This stain is due to the pigment of the blood corpuscles."

The chapter on " Zoster " is very full and complete, containing quotations from the works of Willan, Rayer, Cazenave, Hebra,

v. Barensprung, and E. Wilson. The author, in an appendix, records twenty-six cases of zoster of different parts of the body, and several of which were complicated with pharyngitis. A sub-variety of zoster facialis, is termed zoster buccalis; it "is situated a few lines from the outer angle of the mouth and a little above it, on the extensive anastomosis of the buccal nerves. It is circular or obliquely elliptical when extensive, the longer axis of the cluster being in the course of the nervous twigs which supply the angle of the mouth and the integument of the chin."

The chapter on "Anesthesia" contains: Ataxie Locomotrice in its Relation to Cutaneous Anesthesia; and also a translation from Topinard's work on the same subject. Hysterical anodynia, syphilis, pellagra, acrodynia, and spedalskhed, are concisely and briefly reviewed. At page 86 our author informs us that "the external causes of insensibility of the skin are quite numerous; the following only need be mentioned:—the disease or injury of nerves, neuromata, pressure of exudations on cutaneous nerves, the effects of chemical agents, and of heat and cold. The internal causes of anesthesia of the skin are diseases of the brain and its membranes, and also of the spinal cord, pressure from extravasation upon the nervous centres, the effects of metallic poisons upon the system, and many chronic diseases which produce alteration in the blood and tissues."

In acrodynia we are informed that the lesions of the nervous centres are similar to those of pellagra. "The general conditions which give rise to these diseases are poor food, mental depression, and unremitting toil. Ergot of rye, when this cereal is an almost exclusive article of diet, produces contraction of the blood-vessels of the spinal cord and its membranes, and a consequent diminution in the nutrition and functions of these parts." This fact has been made use of by practitioners in the treatment of herpes zoster, &c. In "spedalskhed" the anesthesia occurs first in limited patches on the skin, attended by structural changes in the parts affected; but it afterwards becomes more general, until the entire skin is attacked. The gait is unsteady on account of the loss of sensibility in the soles of the feet to touch and to pressure. It may be interesting to mention that Dr. Fred. Lente, of New York, in a paper on "Medical Notes on the Island of Jamaica" (*Medical Mirror*, December, 1868, page 743), informs us that "leprosy" is very common in that island, and it usually commences by neuralgic pains; but these, after a time, disappear, and an anesthetic condition

ensues.   There is no inflammatory stage, and the anesthesia soon becomes so complete that the extremities often sustain serious burns before the patient is aware that anything amiss is going on. Dr. Bowerbanke, of Jamaica, pointed out to Dr. Lente various mental conditions of the lepers, and has noticed the existence of buboes below Poupart's ligament as occasionally occurring in these individuals.

The treatment of anesthesia is unsatisfactory, and depends upon the cause of the disease.   " When it is produced by certain diseases which act through the medium of the blood, causing profound alterations in this fluid and its effects upon the nutrition of the nervous centres, our chief reliance is to be placed in the different preparations of iron, of quinine, and in the mineral acids. A tonic regimen must be subjoined to these remedial measures."

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ART. XIII.—*Has the Law of Natural Selection by Survival of the Fittest failed in the Case of Man?*   By LAWSON TAIT, Fellow of the Anthropological Society of London, &c.

THE science of Anthropology is one of such deep interest to all, and of such paramount importance to the members of the medical profession specially, including as it does their every aim and object, that I offer no apology for introducing the following remarks into the columns of the *Dublin Quarterly* :—

In the September number of *Fraser's Magazine* appears a thought-fully-written article " On the failure of ' Natural Selection ' in the Case of Man."   It concludes with this paragraph :—·

" Medical science is mitigating suffering, and achieving some success in its warfare against disease ; but at the same time it enables the diseased to live.   It controls and sometimes half cures the maladies that spring from profligacy and excess, but in doing so it encourages both, by stepping in between the cause and its consequences, and saving them from their natural and deterring penalties. It reduces the aggregate mortality by sanitary improvements and precautions ; but those whom it saves from dying prematurely, it preserves to propagate dismal and imperfect lives.   In our complicated modern communities a race is being run between moral and mental enlightenment, and the deterioration of the physical constitution through the defeasance of the law of natural selection ; and on the issues of that race the destinies of humanity depend."

Such a line of argument as this is one which makes us pause, and at first sight it gives rise to very conflicting emotions. Is our noble profession, is all our hard work, battling against what we may term the first law of nature, only to be beaten by it? or must we get a little further from the surface before we can bring about a reconciliation, and are we likely to find one? Such were my thoughts as I read and re-read the article in question; and in recording them I do not for a moment imagine that my crude ideas and limited powers of investigation will clear up the matter; my only hope is that the attention of those more worthy to deal with the question may be drawn to it. In considering this matter I take as postulates the law of natural selection, and its corollary the correlation of growth; and I assume that the earliest Anthropoids were the men of the Drift—at least the earliest true Anthropoids with which we are yet acquainted.

When we examine calmly, all prejudice apart, the difference between man and all other animals, we find that it is constituted principally by his greater powers of *comparison* and *combination*. These are shared to a certain extent and in certain instances by the lower animals; as for example, combination is seen when wolves, dogs, or jackals combine in packs to hunt one individual animal of another species, who, if matched to one of the attackers, might easily overcome him; but they are pre-eminently the characteristics of mankind. There seems, however, to have been a period in the development of the human race when these powers were of such a low kind as that they could scarcely be said to exist. If we take a Drift implement from the valley of the Somme and place it along with one from Hoxne; or still better, one from the laterite bed of Madras, where they have been found in such prodigious numbers by Mr. Bruce Foote and others, it would be extremely difficult to point out the slightest difference between them. It is true that the European implement is generally of flint and the Madras specimen of quartzite; but this is not an essential point, nor one even of importance, for European implements have been found of quartzite, and generally the material is that which is most convenient in the special locality. It is the manufacture and style which are the important points, and we find that the size, shape, and method of chip are in all cases similar. The implements would seem to have been used either in the hand for striking, or for throwing at the object opposed. Here we have the earliest instance of an animal with a distinct artificial armoury; and while it is evident that the powers of observation (as

instanced in the fact that the weapons must have been used to produce wounds) were of a tolerably high order, yet that the powers of comparison must have been of an extremely low order, from the extensive use into which the weapons were brought, and the probably immense period of time during which they were in use, and before a variety and consequent improvement in their manufacture took place. Again, the power of combination must have been low, for although it is more than likely that the people who used these ancient stone weapons were combined in the pursuit of, or defence from, the enormous animals with which they were surrounded, yet it is almost certain that every man would be his own armourer, servilely, imitating the rude stone he saw in the hands of his fellow savages. Thus an almost perfect physical and psychical equality would exist in this early race, such as the world has not since beheld; and up to the end of the Drift period one might say that the method by which the law of natural selection was applied to them, was similar to that which operated on their surroundings.

The power of comparison would seem to have been the earlier to be cultivated of the two mentioned; and this would be brought about when a community or tribe saw that the chipped stones of one or more of their number flew further, and struck a deeper, wider, or more fatal wound than the implements in general use.  Then the earliest barter might be introduced by the lucky manufacturer making a fortune in skins, received in exchange for his superior flints; and here we have the first germ laid of the great principle of the *division of labour*.  As the manufacturer was encouraged to improve his art by being relieved from the necessity for joining the hunt for his daily flesh, he would give origin to a combination for the common good—the first idea of social life.  Why do men live in political and civil societies? Because man is a social being.  Why are men social beings?  Because they require the help of each other, being physically and psychically variegated in constitution from each other, both as races and individuals.  Were all men equal in mental and physical energy, no one would be able or willing to help another, for every man would be everything to himself; and mankind would thus remain for ever savages, without the slightest prospect of advance.  In support of what I say I may quote from the " Sketches of the Philosophy of Life," by Sir T. C. Morgan, F.R.C.P.:—" Equality is a physical impossibility, since men not only differ amongst each other generally, but age and sex occasion most important variations in physical force, mental acuteness, and

manual dexterity.  When forces are thus unequal, equality of power cannot exist."  The work quoted, along with the "Sketches of the Philosophy of Morals," were written about 1820, forty years too soon to be appreciated; and were they known among scientific men as they ought to be we should be less frequently troubled by exploded theories and reintroductions of what is already well known. As we have just seen, it was because men were developed from this state of equality that they ever became civilized; and we may condemn then the idea of perfect or even moderate equality among mankind as the mere dream of a visionary and the greatest misfortune that could happen us.  That this theory of the development of inequality, in the way mentioned, is more than a mere fancy might be shown by abundance of proof, enough to fill many columns.  It meets our eye readily, however, in the instance of the Indian arrow-makers, who are protected and provided for by their tribe, and have immense respect paid to them, while they in their turn rigidly preserve secret the art they practice.  Indeed we need not go out of the boundaries of Britain to find instances to this point.  In the island of Lewis we have a relict of the stone-age in a pottery made in the parish of Barvas, of a peculiar red clay, glazed with milk.[a] It is made into vessels of considerable delicacy, some even with pretensions to elegance.  There is no doubt a considerable amount of dexterity displayed in the manufacture of a tea-set in my possession, and the method of working is rigidly preserved a secret

[a] In Schoolcraft's "History, Condition, and Prospects of the Indian Tribes of the United States," III., 75 :—"It is very clear that the art of the potter with these races was a 'fixed art,' and the occupation of a particular class of this people.  A hunter or a warrior could not lay aside his bow or his club and set to work to make pottery.  The art of mixing clay with gravel, so that a vessel does not change its form in burning, and bears a sudden transition from heat to cold, and *vice versâ*, presupposes, when successfully carried on, uncommon practice and long experience.  Much less could the general population manufacture flint implements of really good quality. Splitting the flints, and making the fragments into the shape of lance and arrow heads, knives, and saws, requires extraordinary ability and long practice.  Amongst the primeval inhabitants of North America there was a peculiar class of people whose business it was to select the suitable stones and manufacture arrow heads, and who received from the hunters flesh and skins in payment for the implements supplied to them."

"Dr. Keller's Swiss Lake Dwellings," trans. by J. E. Lee, p. 365 :—"A consideration of the earthen vessels discovered leads to the impression that the manufacture of earthenware vessels formed a particular occupation, and that it was exclusively carried on by individual settlers.  The working, form, ornamentation, and the mode in which they were burnt, show, in the opinion of those conversant with the art, such a degree of ability and proficiency that only those individuals who devoted themselves exclusively to this work could produce such wares as we now see before us."

by the family of the old Celtic woman who was the maker. In Italy we find the same fact as recorded by Gastaldi in his work on the pre-historic remains of Italy. The heaps of chips belonging to the Palaeolithic age, found in Denmark and elsewhere, show clearly that what the Indians, now existing in a stone-age, have as customs our European ancestors had likewise.

The rise, progress, and influence of the principle of the *division of labour* I need not, if I could, trace ; each one has only to regard his next door neighbour to see its effects. Concomitant with it, we may rest assured, were developed the powers of comparison and combination.

Here, then, we have a point from which we may date the growth of *intellect* as contrasted with instinct or crude reason, shown in the development of the powers of comparison and combination : for observation, through memory, constituting ideas, the comparison and combination[a] of these produce reason (according to a simple analysis.) Up to this point the law of natural selection has acted as it does throughout the rest of nature, and it does so subsequently too, but not in a manner quite so evident ; and to this consideration of the difference this somewhat lengthy introduction tends.

At this point the *struggle for existence*, and its invariable law of selection, has brought a vertebrate animal into an upright position, still struggling with his fellow vertebrates, but now with a stone in his hand. After the date alluded to the struggle with the other species continues, but then begins that with his own, the like of which we find in no other kind of animal. For this his weapons increase in effectiveness, his powers of comparison and combination increase ; and while they do so at a slow rate, his powers of killing his fellow-man, and his inclination to do so, are sufficient for the purposes of our law. Hence we find in the remains of Archaic man few or no traces of disease. Such traces must be rare, as I have never seen a single instance of diseased bone in the many that I have examined for the purpose, and have not even met with a notice of such a circumstance. I have seen, in the possession of M. Broca, a skull with appearances much resembling the effects of chronic periostitis ; but Professor Busk assured me that it was stalactite, and M. Broca agreed with him. Besides most (nearly all until we come to the late stone-age)

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[a] It may be objected here that I use this word somewhat with the liberty of an "undistributed term," but I think that a slight consideration will show that this is done only with the view of avoiding repetition, and of saving space.

of the remains are those of individuals of an age not far advanced in life. I have only once seen an edentulous lower jaw from a stone-age burial, which I myself found in Sutherland, where the use of stone weapons was continued perhaps to a period not remote from the Christian era.

When, however, civilization grew so that murder and war grew less frequent, as they would by degrees, then the struggle for existence necessitated a new condition, and disease slowly crept in upon mankind; arising, as it would, from many causes produced in their turn by advancing civilization.

Our knowledge of diseases, and the processes of their occurrence, is not sufficiently advanced yet to allow of the absolute recognition of the law of selection in them. We can as yet only see its action on individuals; but, although Morgan, Quetelet, Winslow, Buckle and others, have opened out the way by which we shall, sooner or later, recognize its working on societies of our race, the adequate understanding of it has not yet been arrived at.

We may take, however, as an illustration of how the law necessitates the introduction of disease among civilized animals, the instance of struma and its firm ally, phthisis. Suppose that in the Drift period a few individuals were born amongst a tribe, with narrow chests, deficient in cubic capacity, the law of natural selection would weed them out by cutting off the food supply; but suppose civilization gradually to be advancing from that point, we should find that fewer and fewer of these unfortunates would die, as they might make sure of their food by the help of some of their fellow-beings. The weak-chested ones would help their stronger brethren, by confining themselves to some occupation where violent physical exercise was not so necessary as in the case of hunting. In fact, there would occur, to a limited extent, exactly what occurs now among the lower orders, where a weakly child is always put to some sedentary occupation—generally the worst fate that can befal him. Suppose a male and female of these deformed instances to mate, they would, of course, reproduce their peculiarity to a greater extent; and if the tribe in which they existed were small in number, it would require no great length of time to produce a variety with a tendency to chest disease. Then, from the fact that advancing civilization necessitated less and less the violent destruction of mankind—a destruction which would naturally fall principally on those least fit for survival—there would be propagated a certain number of the population least fit to survive disease; this number

continually increasing, as likewise would the intensity of the tendency to the disease.

Suppose, then, a sudden alteration of temperature to occur, the poorest of the population, that is the oldest and the youngest, would be least prepared to resist it, a certain number of them would die, while the rest would continue to propagate the condition. But mark how the tendency would be, in great measure, checked by the death of the young of the diseased and poor class—a fact which is constantly before our eyes now. How the law of natural selection works to prevent the over-action even of its own agent; exactly as it does when the lion over-eats the antelope, and, therefore, makes his own kind scarce. But if the lion were to disappear, the antelope would, by disproportionately increasing, not only destroy its own kind but many others, both vegetal and animal. The death of weakly men, by disease, is merely a substitution for their violent death under more barbarous circumstances, and it is modified by the ratio between the food supply and the population.

We know that there exists a constant and never-varying ratio between the price of corn and the number of marriages. When food is cheap, the population increases, and disease is less rampant; when food is dear, precisely the reverse occurs—fewer marriages, and far more disease.

In our country the instance of phthisical and strumous diseases is a particularly happy one; because we know that all forms of them, and all diseased conditions with which they are intimately allied (more especially insanity),[a] are steadily on the increase.

Along with our advanced civilization, there has occurred, not necessarily in connexion with it but possibly so, an alteration of climate, which has had a very great influence on those less fit for survival, by reason of pulmonary debility. We know that ever since the Roman occupancy, and probably for some considerable time anterior to that period, we have been losing, to some extent, our insular character; that is, the sea has been retiring from our coast. We know that, in the eleventh century, the Castle of Norwich stood on an arm of the sea; and that at Legeolium, and the Antonine Wall, the water was at a considerably greater elevation during the Roman period than it is now. During the thirteenth century, the vine grew freely, and produced fruit

[a] See Clouston's Papers ; Journal of Mental Science, 1863 ; Transactions of Med. Chir. Soc. Edin., &c., &c.

in the open air in parts of England,[a] where it would scarcely put out leaves now. We know that those storms, which have been so violent and so general as to attract frequent notice, have been gradually increasing in frequency, from the eleventh century, in a ratio which is not altogether explained by the probability of more notice being taken of them as the tendency increased for observation of natural phenomena. It seems, also, to be a recognized fact, that the average rainfall, in Europe, is steadily increasing, year by year. Le Hon[b] gives for Belgium the rainfall of the month of May for four years:—

| 1842 | . | . | . | 49·52 milimetres |
| 1843 | . | . | . | 52·83 ,, |
| 1844 | . | . | . | 81·04 ,, |
| 1845 | . | . | . | 106·09 ,, |

We know that the northern ice-cap is slowly increasing—has rendered the larger part of Iceland totally uninhabitable—the Alpine and Norwegian glaciers grow every year, and Greenland is rapidly disappearing. In fact, the conditions, unfavourable to the class of cases instanced, are becoming more persistent as our climate becomes less temperate.

Then there is the other condition: war becomes of more and more seldom occurrence, and every improvement of armoury—every triumph of the division of labour—makes it less fatal.

Thus, it follows that the less war, the more pestilence; the greater the civilization, the more terrible the disease. This accounts for the fearful mortality which ensues among our autocthonous and savage people, when infected by the diseases of a race much their superior in civilization. Could a better instance be given than in the case of the Micmac Indians, annihilated by a single attack of small-pox?[c] Does it not account for the fact, that every century seems to have an epidemic more terrible than the epidemic of the century preceding, apparently in the same ratio as the difference of the condition of the people of the centuries in point of progress in civilization? Does it not

[a] Periodicities des Défriges. Adhemar : Paris, 1867.

[b] Harmonies de la Mer.

[c] The experience of the surgeons in charge of coloured troops during the late war, as shown in the Report of the Surveyor-General, shows that while the negroes were not less likely, in the instance of any disease, to be attacked than the whites, that in the cases of scarlet fever, measles, and pulmonary diseases, they suffered to a much greater extent. (See the papers on the Cause of Camp Diseases, edited by Austin Flint).

account for the fact that no sooner has science overcome one epidemic, than another, far more formidable, makes its appearance? Did not the Elizabethan epidemic of ague give way before Jesuit's bark, drainage and tree-planting, only to be superseded by the more terrible small-pox? This, in its turn, has almost succumbed before the genius of the immortal Jenner, only in its turn to give way to the horrible cholera. Is it fair, under such circumstances, to accuse the medical profession of having stood still since the days of Hippocrates?[a] or need we be surprised at the evidence before us all of the existence of a change of type of something—be it of disease, or be it of human constitution? It would seem, and I believe it to be, a dream to imagine that we can ever eradicate disease as an entity; nor do I believe (unless under the circumstances of a millenium, of which the prospect is faint,) that it would be an advantage to our kind that we should. But, for all this, are we to give up our scientific pursuits, our hard-working, practical medicine? Certainly not. For, let us see what would happen in either case: if we eradicated disease, the chances of life and death being equal, beings of an equal calibre, in every respect, would be produced; on the other hand, if we gave up the treatment, and prevention of disease, the same condition would be brought about, and in a shorter time, and, of course, with a residue of population infinitely less in numerical strength than there would be under the action of the former hypothesis; and this, having reached the phase of individual equality, would soon increase to the dimensions of the other supposed condition. The result would, consequently, be equal in either case; namely, that the struggle for existence would be so intense, with no advantage to any individual, that there would be a perfect and general dead-lock, and an equally perfect and general destruction of mankind. Therefore, we must continue to suffer disease, and we must equally continue to study and treat it with the knowledge of the fact that, Syscophus-like, we can only roll the stone nearly to the top, and then see it roll down again.

In this manner, I believe, this great law acts on man; but if its action is more complicated than elsewhere, it is not the less in existence. For the same reason that science keeps a check on the ravages of disease, and so prevents the establishment of equality, so the protection of property for those who, in the words of the writer in *Fraser*, " Never could themselves have acquired property

[a] Sir William Hamilton.

by industry, or conquered it by courage, or kept it by strength or ingenuity, and who are utterly incompetent to use it well, are yet enabled by law to inherit and retain it"—for the same reason it is retained to those that there may be an inequality. For by the very fact that they are unable to use it properly, it passes at a greater or less speed from them to get into the hands of others, who, for the time, get it by their superiority in the struggle for existence; the descendants of the latter in their turn degenerating, the process is again repeated. The accumulation of property inherited under protection merely forms magazines of the material by which the struggle for existence is kept up, and from which it is distributed to the "fittest for survival."

Thus it is of necessity that the law of entail is now impracticable. An entail cannot now be made, rendering as it would, the struggle for existence a hopeless and impossible one, by shutting up the storehouses, save to access by a privileged few. We find in the small remnants of the old aristocratic families of the land which are now left us, much of that fine animal courage for which our Norman invaders were marked; but this is merely a racial peculiarity, which is always strongly inherited. But how seldom do we hear of the son of a great general, or of a great politician, following in his father's footsteps; still less frequently are the talents communicated to more distant descendants. It is because the success of the original member of the family has put his immediate posterity beyond the necessity for entering the arena of the struggle for existence. Hence they disturb equality, and give way to others more fitted for the struggle, only holding on till they are pushed off the stage. Can we look at the political history of our country for the last two centuries without seeing it crowded with instances? Do not even now the Wellingtons and Marlboroughs give way to and rank far below Gladstone and Disraeli? We shall find, and that I believe before long, that a system of life peerages, which must be introduced, will push the *ancienne noblesse* to the wall, as surely as the Saxon has destroyed the Tasmanian—when those who, in the struggle for existence, have obtained the first rank in law, medicine, in all the arts and manufactures, will form one Upper House of Appeal.

On the other hand: "In a natural state of society they would have been pushed out of existence, jostled aside in the struggle and the race, and left by the way to die;" but this cannot, and must not

take place now.   For, suppose that there was no protection for property, might would again be right in its fullest meaning, and we should recur to our original savage condition.   Or, suppose that there was protection for, but no inheritance of property, to whom would the property go?   Putting aside the consideration of the impracticability of a general division at each decease, and suppose that the property went to a central government as *haeres communis*, this condition would have one of two results, either the seizure of the whole, and its retention by what would become an oppressive oligarchy, or there would be a necessity for the establishment of jubilees, for the purpose of the distribution of the accumulated wealth.   In the intervals between such distributions, and more especially towards the close of the interval, the struggle for existence could be carried on by barely one-half of a population, on account of the drain of the material, and disease and famine would be rampant; while, for long after the distribution, there would be an utter stagnation from surfeit, and until some inequality came about by the old process of accumulation by some, and loss by others.

Thus, we see that there cannot and must not be anything like an equality, either in health or property.

The writer in *Fraser's* apparently would select (as breeders do with animals) " till all the human race, both in its manhood and its womanhood, became a glorious congregation of saints; till we were all Blondins, all Shakespeares, Pericles, Socrates, Columbuses, and Fenelons."   Apart from the consideration that the very law we are considering—the law acting by *variation*—would utterly prevent such a condition being attained, or at least retained, one might ask, suppose it could be arrived at, *cui bono? to whom would it be for a good?*   Certainly not to the people concerned (we are considering them with special reference to their individuality, not in relation to their existence as a race or races; although even then, since the author quoted imagines this alteration for the whole human race, what I say would hold good); for the very idea of *good* implies comparison.   If all were equal we could predicate of none that it was *good* for them, or *evil,* for there could be no contrast.   Could *then* any one Shakespeare benefit in the least his brother (and sister) Shakespeares?  or would there be the least occasion for the athletism of a Blondin when all were Blondins, and were to remain equally so?   Could the religion of a Fenelon be of service to his neighbours when they could equal him in their sentiments and powers?   We must answer in the negative; for to entertain such

propositions would be to predicate *finity*, and of this we can form as little conception as of *infinity*. Besides, could all this power be called into existence only to die off for want of exercise?

I believe then that I may sum up by saying, that when an animal becomes erect, and begins to appreciate the principle of the division of labour, then begins its development in domestication, its tendency to protection of individual rights, and an increase of its tendency to disease; and with the latter I am certain that there is a correlation in the development of the *Xanthocroic physique;* for Darwin tells us that white terriers suffer more from fatal distemper than others, and that white chickens are more liable to the *gapes* than those of other colours; indeed, that under domestication light coloured animals generally suffer most from disease, and from parasites.

We also are well aware of the fact that savage nations are comparatively very free from disease until contaminated by a superior race, when all at once the virgin soil is covered by the weeds. We also know that in direct ratio to the degree of civilization, or more properly domestication, is the severity of the disease, the average age to which the people live, and the number of births. Among domestic animals the most fertile is the sheep, and it is the most diseased.

Finally, that to whatever elevated rank mankind may attain in development, it is essential that there shall be individual inequality.

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

### *RECENT WORKS ON SYPHILIS.*

1. *The Pathology and Treatment of Syphilis, Chancroid Ulcers, and their Complications.* By JOHN K. BARTON, M.D. (Dub.), F.R.C.S.I.; Surgeon to the Adelaide Hospital; Lecturer in Surgery Ledwich School of Medicine; Visiting Surgeon Convalescent Home; late University Anatomist; Pathological Society's Gold Medallist, 1852. Dublin: Fannin and Co. 1868. 8vo, pp. 316.

2. *Syphilis and Local Contagious Disorders.* By BERKELEY HILL, M.B., Lond., F.R.C.S.; Assistant Surgeon University College Hospital; and Surgeon to Out-patients at the Lock Hospital. London: James Walton. 1868. 8vo, pp. 505.

3. *A Treatise on Syphilis, Historical and Practical.* By Dr. E. LAUNCEREAUX, Head of the Clinical Department of the Faculty of Medicine in Paris. In Two Volumes. Vol. I. Translated by G. WHITLEY, M.D. The New Sydenham Society. London. 1868. 8vo, pp. 405.

4. *Cases of Disease of the Nervous System in Patients, the Subjects of Inherited Syphilis.* By J. HUGHLINGS-JACKSON, M.D., F.R.C.P. London: John Churchill. Pp. 22.

5. *Visceral and Hereditary Syphilis.* By F. OPPERT, M.D., M.R.C.P.L.; Physician to the City Dispensary, &c. London: John Churchill and Sons. 1868. Post 8vo, pp. 100.

FOR many years we have viewed with extreme interest the progress of our knowledge of syphilis; at the present day, though much remains unknown or doubtful to stimulate the industry and reward the labour of future inquirers, we can point to our acquaintance with this disease as full of encouragement to us in our efforts to

attain clear views of pathology. Presenting intrinsic difficulties of no ordinary kind, the subject of syphilis had been rendered still more obscure by theories which had so long held possession of the minds of our foremost men that they reached us sanctioned by their continued acquiescence, and we did not venture to question their correctness, a correctness too, which some facts seemed unquestionably to establish, while others seemed as unquestionably to invalidate. Out of this chaos has arisen precise and accurate knowledge, and this has been attained, not by any fortuitous circumstance, but by many earnest workers collecting facts with diligence and severe scrutiny, and analysing them with care and patience; nor has our science advanced more rapidly than our art. Guided by a more exact knowledge we have learned to avoid the mischievous methods of treatment which were formerly in fashion, and to use against the disease the principal remedies we have so long possessed with discrimination and certainty; nor is it only on these grounds that the study should interest us, supplied now with the thread which enables us to follow the malady through its varied and successively evolved manifestations, we have suggested to us the probable course of analogous diseases, and feel that we are getting glimpses of a truer pathology. Such being the case, we have no hesitation in saying that the physician or surgeon who continues to undertake the treatment of venereal diseases, ignorant of the recent advances in our knowledge of them, incurs a grave and serious responsibility, and we therefore place first among our reviews in the present number a notice of the valuable works which stand at the head of this article.

Dr. Barton devotes his first chapter to a brief but lucid sketch of the progress of the investigation, in the hands of various distinguished observers, till, by the gradual accumulation of facts, it was at last ascertained with such certainty that few now doubt it that there are two specifically distinct sores communicable by impure sexual intercourse, the one capable of producing more or less local annoyance and even serious loss of tissue, but possessing, under no circumstances, the power of contaminating the rest of the body, and curable by local treatment; the other commonly productive of less local injury, but surely followed by symptoms which prove that the whole system is poisoned and amenable only to constitutional remedies. With great justice, however, he reminds his readers that it is only by making themselves familiar with *all* the features of the sores produced by each poison, that they can hope to be able

accuratately to distinguish them.    At the root of the whole matter indeed lies the question of the duality of the chancrous virus, and we cannot but attach the greatest weight to the independent testimony of the author, who, possessing an ample field of observation, has taken time maturely to consider his conclusion.

" Several years ago," he says, " I determined to test by observation the view then confidently put forward, that the soft sore was never followed by any secondary disease whatever.  At this time I held the opinion that the soft sore was as truly syphilitic as the indurated chancre, but that it preceded a milder form of secondary disease ; and it was with a view of publishing the results of my observations that I noted every case both of primary and secondary symptoms which came under my notice for an entire year. The out-patients at the hospital, who are seen daily, and number nearly a hundred, afforded ample field for this.    It was necessary, in order to prove my views correct, that I must have at least one case of distinctly-marked characteristic soft sore, standing undeniably as the initial lesion of secondary syphilis.  I met with no such case either during that or any subsequent year.   In the great majority of cases I found induration more or less marked in those chancres which were followed by secondary symptoms.    In some, however, there was no induration, the sore was quite soft ; but in all other respects it was like the indurated, and unlike the simple sore.   In particular, I found the state of the inguinal glands a safe guide, they never presented the peculiar indurated, sluggish enlargement, except with the infecting chancre.    From the experience thus gained, I was obliged to give up the idea that the soft or simple suppurating sore was syphilitic at all, and conclude that the two sores were distinct, the one a local disease, the other a symptom of a general infection of the system.   At the same time I admit that induration is not a certain or constant sign of the syphilitic sore ; which, however, although without induration, is quite unlike the true suppurating or simple sore. The absence of induration is frequently caused by the patient having taken some mercury previously to our examination of him, or by merely the lapse of time ; six weeks or two months, in some cases, will suffice to remove induration.  Allowing for these, in the great majority of chancres which are followed by secondary syphilis, induration more or less marked may be noticed ; and in the remaining few, when the sign is wanting, other symptoms remain which indicate the true nature of the sore."

In the second chapter Dr. Barton describes very carefully the characteristics of the simple venereal ulcer, the sore which is local incapable of affecting the system, and, except when some complication arises, amenable to topical treatment ; in the third are noticed the various complications of the local sore, several of which are trouble-

some, and one at least of which, phagadena, is perilous, the appropriate treatment of the sore, and of its accidents being minutely explained; at page 54 is detailed a case of that most serious complication, phagadenic bubo, which forcibly illustrates the lamentable results of improper management on the one hand, and, on the other, the happy effect of energetic and skilful treatment.

Having thus cleared the way, the author devotes the remainder of his work to the consideration of syphilis. We commend the fourth chapter to the perusal of our readers; in it he gives an account of the natural course of the disease; this we consider a most important subject, for we believe that not only are various diseased conditions, which could be readily controlled by specific treatment, allowed frequently to go on unchecked, their syphilitic nature being unrecognized, but we have seen lamentable instances of patients being submitted to a mercurial course, for which their constitution was unsuited, with the expectation of removing symptoms which any one familiar with the order of evolution and characteristic features of syphilitic phenomena, would never have attributed to that poison.

Some years ago it was held that the disease could not be communicated by secondary eruptions. It is said that a distinguished French surgeon, with that demonstrative enthusiasm which our brilliant neighbours display, was in the habit, in presence of his class, of kissing patients whose faces were covered with a syphilide, to show his disbelief in the infecting power of the secondary phenomena. This dangerous doctrine has now, we believe, no supporter; yet we cannot help quoting one of Dr. Barton's cases to show the necessity of warning syphilitic patients of the danger to which they may thoughtlessly expose their friends.

"A respectable married woman, of middle age, presented herself amongst the patients attending the Adelaide Hospital Dispensary, in November, 1866. She exhibited unmistakable signs of syphilis in its secondary stage, one of the most prominent symptoms being condylomatous sores at the corners of the mouth, and on the tongue and throat. At this time she had four children, all healthy, the youngest being about two years old. She had received the infection about six months previously from her husband. Placed upon suitable treatment, her symptoms soon got better, and she ceased to attend. About six months afterwards, however, she called upon me, bringing her youngest child, a boy of two and a half years of age, who, she stated, had begun to fall away in flesh and strength very much during the last month. Upon examining the

child, I found well-marked condylomata of the lips, falling out of the hair, and other syphilitic symptoms.  The mother stated that her own lips had been from time to time during the past six months affected with the ulcers which had been cured at the hospital, and that she feared she had given the disease to the child, either by kissing it, or by his using her spoon.  This child improved under mercurial treatment.  It was, however, carried out but very imperfectly, and the condylomata of the lips were constantly recurring.  In about six months after the disease showed itself in this child, an elder brother, a boy about eight years of age, was brought to me with a well-marked syphilitic sore on the lower lip, and indurated glands under the jaw.  The mother at this time showed no signs of the disease; and the younger child was much improved in general health, but had still sores at the mouth.  The boy last affected looked pale and sick, and has since suffered from well-marked symptoms of secondary syphilis.  Upon being questioned, the mother stated that all the children used the same mugs and spoons.  The father, the author of the infection, I had no opportunity of examining."

In the fifth chapter the author describes with care and minuteness the first stage of syphilis, the initial lesion of the constitutional malady, the true syphilitic chancre which presents itself under two forms, differing not in kind but in degree, the Hunterian or deep, and the superficial.  In the sixth we have an account of the premonitory fever which ushers in the second stage of the disease, and of the symptoms of that stage, the falling of the hair, the enlargement of the lymphatic glands, the eruptions on the skin, the affections of the throat and eyes.  With the termination of the second stage the malady is sometimes at an end, but such too often is not the case, and the various phenomena, the leading pathological character of which consists in the deposition in the tissues of syphilitic lymph, which have been recognized as constituting the third stage, are liable to occur.  In treating of these, which he does in the seventh and eighth chapters, at the length which their importance demands, Dr. Barton adopts a classification of them which, for practical purposes, has much to commend it.

" A subdivision of the long array of these symptoms," he says, " founded upon the time when they appear, is impossible, inasmuch as they observe no constant order, or approach to order; but a pathological distinction exists in the character of the deposit, which may suitably form the basis of a subdivision, especially as this difference is found to mark a corresponding change in the general state of the patient, and will be found to indicate the necessity of a different line of treatment.  Hence

the symptoms of the third stage will now be considered under the two following classes :—

" 1st. Those characterized by the deposit of hard contractile lymph, which are usually the earliest to appear, and may, in contradistinction to the second, be called sthenic.

" 2nd. Those characterized by the deposit of a soft, gummy material, which usually are later in their appearance, and may be termed asthenic.

" The symptoms included under the first of these divisions may be classed as follow :—

" 1st. Deposits in the skin, forming cutaneous eruptions.

" 2nd. Deposits in the mucous membranes, giving rise to ulceration and contraction of the pharynx, larynx, bronchia, intestinal tract, &c.

" 3rd. Deposits in glands and other viscera, such as the testicles, liver, spleen, lungs, &c.

" 4th. Deposits in the nervous system, *i.e.*, brain, spinal cord, and nerves."

Having given an excellent description of the symptoms caused by lymphy deposits in these various tissues, he proceeds to the second great class of tertiary phenomena, that constituted by deposits in the cellular and submucous tissue, in the muscles, tendons, and fasciæ, in the bone and periosteum. Before entering on an account of them, he says :—

" It is necessary to explain, that all the symptoms of the tertiary stage may present this character—the gummy, instead of the lymphy, deposit being found in the skin, testicles, liver, brain, &c., as well as appearing in the lesions now to be described. But in the case of those we have already examined, this is not the ordinary, but the exceptional kind of deposit ; while in the symptoms about to be described, it is the rule, and the fibro-plastic deposit the exception. In the testicle, for example, as already explained, the ordinary characters of syphilitic sarcocele, are, as its name implies, those of a hard, fleshy tumour, whose natural progress is to go on to contraction, and consequent atrophy of the gland ; occasionally, however, a tubercular form of the disease is met with, which goes on to suppuration and the formation of a slough. All will admit that this latter is the exception, the firmer kind of deposit being the rule. On the other hand, we find the cellular node, or gummatous tumour of the cellular tissue, as a rule, always produces a slough—a hard, fibrous tumour, which does not slough, being here very rarely met with ; so that, while admitting that all the deposits which take place during the tertiary stage may, under the varying influences of individual health and habits, present either kind of deposit, we may safely conclude, at the same time,

that in lesions of certain tissues we have, as a rule, the fibro-plastic deposit, while in those of others, in the great majority of cases, we will find the gummy matter laid down. That syphilitic affections of the viscera belong, in the majority of cases, to the former division, is proved by the records of numerous *post mortem* examinations of such cases, which have been made by competent observers. Of the other symptoms described in the last chapter there can be no difference of opinion. Between this group, then, and that of the symptoms yet remaining, there is no marked line of demarcation, nor does any necessary period of time elapse before these later phenomena appear. They are produced, in some cases, very soon after the secondary period—not for many years in others—and not at all very often; but whenever they do appear, they mark a decline in the vigour of the morbid processes, arising not so much from the length of time during which the poison has been in the system, as from a failure of the vigour or vitality of the system itself, thus, in many cases, a tubercular eruption, sarcocele, or visceral disease, comes on when ten or more years have passed since infection; these symptoms still presenting the same characteristic hard, fibro-plastic deposit which they show at an earlier period; and, on the other hand, the lesions characterized by the gummy deposit may appear within a year or two after infection, and present then, as if developed later, the same want of vigour, and accompanied by the same want of vitality in the system. Hence patients of a strumous diathesis quickly produce these latter symptoms; and, indeed, it is in such that we meet with the most terrible examples of their destructive character. These symptoms have been called *sequelæ*, in reference to the analogy they bear to the lesions known under this name, which come on after scarlatina and other fevers. In employing this name, we must guard against the idea, which might be suggested by it, that they have in any degree lost their syphilitic character: although their production is influenced by the constitution of the patient, yet they are as truly characteristic of syphilis as are any of the lesions already described."

With the opinion expressed in this extract we entirely concur, and consider the distinction which the author makes as of the first importance in determining the treatment to be adopted. Alike important to the physician and the surgeon, we cannot too strongly urge the attentive perusal of these chapters, containing as they do a succinct account of the many and valuable additions to our knowledge of the late phenomena of syphilis, more particularly the visceral lesions, which we owe to the investigations of the last few years.

When we inform our readers that Dr. Barton devotes seventy-

one pages to the subject of treatment, we need hardly say that he is not an advocate of the so-called expectant method; on the contrary, recognizing the power, both for good and ill, of the drugs which have been used against syphilis, he appraises them, we think, at their true value, and lays down wise rules for their use. He explains the indications and contra-indications for the employment of mercury, which he recommends as generally necessary in the first and second stage of the disease, though with Ricord he believes its action is limited to causing the disappearance of the symptoms present when it is administered, and that it cannot be considered capable of neutralizing the poison. He lays great stress on its gradual introduction into the system, and in common with Colles, Brodie, and Sigmund, prefers that this should be effected by inunction.

"The patient's diet and daily habits should in the first place be regulated; the former should consist of meat once daily, without any stimulants beyond beer or porter, sometimes better without any at all. He should keep regular and early hours, going to his bed not later than ten o'clock, and not rising before eight in the morning; during the day he may be engaged in business, if it be not of a laborious or exciting description. Half a drachm of the ung. hyd. fort. should be rubbed in each morning after breakfast, for twenty minutes or half an hour. The morning is the best time, because the patient is then most vigorous; and besides, if rubbed at night, the heat and perspiration produced by lying in bed will cause a considerable loss of the ointment, and the patient breathes an atmosphere loaded with mercury. Unless the full time mentioned be given to the rubbing, half the ointment will be inefficient. It is usually necessary to impress the importance of this upon the patient, who, however, in a very short time lends a willing aid to the surgeon, finding his symptoms disappearing gradually, and his general health and strength improving rather than decreasing.

"The inside of the thigh and popliteal space is the region where the inunction can be best practised. The patient should be told to rub in upon each thigh upon alternate mornings, carefully washing off the old ointment with warm soap and water before commencing the new inunction; this prevents the skin becoming irritated, and mercurial eczema appearing; if, however, a few scattered pustules do appear, the rubbing should be transferred to the axillæ for a time. I am in the habit of directing the patient to take a hot-air or Turkish bath once or twice a week during the treatment, and find it not only preserves the skin from irritation by thoroughly cleansing it, but also facilitates the action of the mercury; patients, including those in hospital, always express a sense of comfort and relief from the use of the bath."

The treatment of the later manifestations of the syphilitic poison, eminently intractable, and often perilous to life as they are, is always the subject of anxious consideration to the practitioner, and the convenience of Dr. Barton's classification of them is at once apparent when he comes to discuss the treatment of the third stage of the disease. Valuable as are some drugs, and suitable hygienic management in improving the general health, it has long been conceded that in combating the later syphilitic phenomena we cannot dispense with the specific remedies, mercury and iodide of potassium, and those physicians and surgeons who have had the successes and the failures of a long experience to guide them, are generally able, in an empirical fashion, to determine in any individual case which is the more appropriate medicine; but we think we do not go too far in saying that with most men beginning practice, and with many all their lives, the rule has been to try the iodide first, and if that fails to have recourse to mercury. The author attempts, and we think successfully, to formularize the indications, so that the employment of mercury and the iodide may rest on a more secure basis. In the chapter devoted to the description of the phenomena of the third stage, he told us which tissues were most generally, when attacked with the poison, the seat of the *hard*, and which were most commonly the seat of the *gummy* deposit. Guided by this information, we will generally, when we have to deal with syphilitic disease, even of structures hidden from our view, be able to tell the character of the deposit; if hard, the author says, we must use mercury; if gummy, iodide of potassium; and in mixed cases a combination of the two. Mercury he considers indispensable in the scaly affection of the skin, and in the dry tubercular eruption, and cautiously used the appropriate remedy for ulcerating tubercles also; iodide of potassium, on the contrary, is the agent which, with marked good effect, exerts its influence on morbid changes affecting the mucous membranes. In common with most surgeons, Dr. Barton prefers for this stage the bichloride or biniodide to the other preparations of mercury. An account is given of syphilization which finds no favour with our author. In the last chapter we have an account of hereditary and infantile syphilis, in which the reader will find the various important additions to our knowledge which we owe to the labours of Diday, Hutchinson, and other painstaking observers; and the work concludes with a succinct tabular view of the manifestations of the acquired and the hereditary disease, placed side by side, so as to

bring prominently forward the distinctive features of each. We can say most truly that the profession in Britain is much indebted to Dr. Barton, for placing within its reach in a work of moderate compass, a complete account of this most important disease, and an eminently practical guide to its management.

From Mr. Berkeley Hill's papers in the *British Medical Journal*, we were aware that for some time past he had been devoting considerable attention to venereal diseases. The work before us consists of five divisions, the first contains a sketch of the history of our knowledge of these maladies; in the second and main portion true syphilis is described—its mode of propagation, its progress, its phenomena, as manifested in the various structures, and its treatment. The third part describes chancre, which term the author restricts to the local contagious ulcer; in the fourth is given an account of gonorrhea; and in the fifth are noticed accessory venereal diseases in the male and female. Though more bulky than the work last noticed, Mr. Berkeley Hill's volume contains about the same amount of matter. His table of contents we commend to the study of all gentlemen who are about to bring out medical books, for its admirable arrangement, and the way in which, at a glance, it supplies one with a notion of the mode of treating the subject; as to the advantage of the summaries which we find at the end of several of his chapters, we do not quite agree with the author; they tempt the careless to omit in their reading the fuller statement of the argument, without which no proper acquaintance with the subject is possible, and to him who studies the book with care they are useless. At the conclusion of a very lengthy discussion a short summary may occasionally serve a good purpose; but to introduce seven pages as a summary of a chapter of only eight-and-twenty, surely is unnecessary. Agreeing with Dr. Barton on all the important questions involved, he presents the subject to the reader in a different manner. Dr. Barton first clears the way by describing the local venereal sores which have so long been confounded with the first stage of the constitutional disease, and then proceeds to its description. Mr. Hill reverses the arrangement, and treats first of the general disease, and subsequently of the local maladies. Both will make the careful reader thoroughly acquainted with the subject. To the student, however, who has no previous knowledge of the questions involved, or who is in the more unfortunate position of having a confused and erroneous

conception of them, we think Dr. Barton's plan is more likely to give clear ideas.

Travelling over the same ground as the former work, we will not stay to allude to more than a few of the author's conclusions.

We quoted an interesting case from Dr. Barton's practice, showing the danger which, somehow, is not sufficiently considered of communication of the syphilitic poison by the secretion of a secondary lesion, a case which forcibly illustrates the risk, is also narrated by Mr. Hill.

The uselessness of attempting to avert constitutional contamination by any local treatment, however active, of the primary sore, or, as Mr. Hill very felicitously terms it, " the initial manifestation," has long been inferred, but it is seldom that the surgeon has such an opportunity as the following of deciding the point:

"In July, 1858, a gentleman applied to me with the following story :— That morning, about four o'clock, during violent intercourse, he had felt a sudden snap. On awaking, a few hours after, he found the bed and his clothes much stained with blood, so that he must have bled freely. He discovered the frenum to be torn across; this made him anxious to know if there were any means to insure him against the chance of syphilis. At 3·30 p.m. of the same day, I examined the part, and found that the frenum was torn down, the wound slightly swollen, but otherwise quiet enough. Ricord's views were then in vogue—that destruction of the sore within five days of its existence would prevent syphilis, and I assured him that cauterization would remove all danger of the disease. To make sure, I destroyed a considerable layer of tissue with fuming nitric acid. In due time the eschar I made separated. The surface healed very quickly, and my patient's satisfaction was extreme. This was the end of July. In the latter part of August he called again, and showed me the cicatrix, which he said that morning he noticed to have altered. It was clearly indurated. Presently the glands in the groin enlarged, and general syphilis followed, which lasted a couple of years. The induration increased in the cicatrix, but it never ulcerated again."

Of the initial manifestation, as it is usually seen on the genital organs, he gives an excellent description, first, of its typical forms, and, secondly, of the alterations to which it is liable from local irritation or admixture with the poison of the soft sore.

Three typical varieties are enumerated by him.

" 1. The *desquamating papule* begins by forming a small solid elevation at the point of inoculation; this, at first the size of a pin's head, extends

until it may reach that of a sixpence or a shilling. The skin around retains its natural aspect, and no inconvenience, except now and then a little itching, is felt. The colour is reddish coppery, or reddish purple, like raw ham. The surface, slightly raised above the skin, is flat and smooth, being covered by a few thin scales of dry epithelium. Not unfrequently the papule undergoes no further change, but after five or six weeks grows pale and subsides, leaving no trace of its presence. When the site of inoculation is the scar of a previous chancre, the cicatrix is thickened by this new deposit, which then frequently assumes an irregular form; instead of round or oval, it becomes angular, or linear; in these cases the coppery tint is often altogether absent, and the surface retains then the same hue as that of the surrounding skin. This form is most common on the skin in situations which are kept dry and not chafed.

" 2. *The superficial erosion* comes between the dry scaling papule and the well-marked ulcerating papule; common localities for it are the under surface of the foreskin, or in women the opposed surfaces of the nymphæ, where the parts are constantly moist. For its production the surface of the elevated papule becomes red, secretes a plentiful fluid, usually thin and serous, but occasionally puriform. These eroded surfaces are similar in appearance to the mucous patches of the general eruption, which, like these, owe their character entirely to the constant moisture. Sometimes on the skin or sheath of the penis the induration is very scanty, the surface consequently is only slightly raised; and it usually secretes a little viscid discharge, but has no tendency to extend, nor, unless irritated by dirt, to suppurate. Its edges are clearly defined, which peculiarity, with the absence of induration, causes it to slightly resemble the simple contagious chancre.

" 3. *The indurated ulcer* begins exactly in the same manner as the papule; but the surface instead of stopping short at desquamation, ulcerates. The ulceration begins at the centre and spreads outwards through the indurated papule, but does not extend beyond the papule, whence the cicatrix is very small when the ulcer heals, and often imperceptible. The fully developed sore has the typical appearance of an indurated chancre. The base is hard and resisting, feeling between the finger and thumb like a cup of gristle set in the skin; its surface is covered by a scanty adhesive yellow discharge, the edges are sloping, rounded, and the induration extends a little beyond the extent of the ulcer. The progress is always slow, and, if the sore is kept clean and free from irritation, terminates by cessation of the ulceration, cicatrization of the surface, and absorption of the indurated deposit. The period of existence of the initial manifestation varies from three or four weeks to, in rare cases, a duration of several months, if not shortened by treatment."

As helping to distinguish the true induration so characteristic

of syphilis from the subjacent thickening which may occasionally in local sores simulate it, he makes, we think, an excellent point in drawing attention to the blanching of the syphilitic induration if pressed. His view that the general enlargement of the lymphatic glands usually takes place only in those regions where the glands are fed by lymphatics, from portions of skin affected by eruption, agrees with our own. There are, however, exceptions; we had lately an opportunity of seeing marked enlargement of the posterior cervical glands, when the most careful examination did not discover any eruption on the scalp.

Many works on skin diseases fail to help us much to distinguish syphilitic from non-syphilitic eruptions, and we think Mr. Hill has given those who make cutaneous phenomena a study, valuable aid in the following summary, of the points available for diagnosis:—

### "Eruptions on the Skin, or Syphilides.

" *General Remarks.*—Syphilitic eruptions resemble many of the ordinary cutaneous eruptions ; hence, the various forms have been named accordingly. They are distinguished from the latter, however, by characters they have in common, and by some peculiar to each: thus their diagnosis is rarely a matter of much difficulty.

" *Characters possessed in Common by the early Forms.*—1. The *papular* is the commonest eruption. All the other, even the macular, eruptions are mingled more or less with papules, and for this reason the papule becomes the type or basis of all syphilitic eruptions. With this tendency to produce papules, the different rashes do not develope into typical examples of the kind among which they are classed. The vesicles are abortive, and the scaling patches desquamate but scantily.—2. *Symmetry of the rash.* In the early stages both sides of the body, both arms, both legs, are beset with spots, because the virus producing them pervades all parts of the body.—3. *The colour of the eruptions.* At first, this is often bright red, but it changes quickly to the hue of raw ham, or assumes a coppery tint. As the eruption fades, the brown colour becomes more distinct, and ultimately turns to brownish-grey before disappearing altogether. In vascular or dependent situations, like the face or lower limbs, a purplish tinge sometimes pervades the brown, but this is less common than the coppery-red hue. The rapid change of the bright redness to the peculiar coppery-red or raw ham-like colour, is very characteristic.—4. *Rarity of irritation.* Syphilitic rashes are almost always entirely free from heat, itching, or smarting, symptoms of which one or other is a common character of most non-syphilitic affections of the skin, and is often their prominent symptom. This peculiarity in syphilis is in part owing to the

usually slow progress of the eruption, for a little transitory itching does accompany a syphilitic rash when that is very rapid in development.— 5. *Favourite localities.* Most frequently the trunk, the forehead, especially along the border of the scalp, the margins of the nostrils, and the nape of the neck are chosen by the eruption. The outer aspects of the extremities more often escape, and the backs of the hands and feet are rarely marked. On the contrary, the palms and soles are frequently attacked by syphilis—situations commonly avoided by non-syphilitic rashes. Again, the favourite localities of the non-syphilitic eruptions are not those of the corresponding syphilitic rashes. For instance, simple macular eruptions prefer the extremities, syphilitic maculæ select the trunk of the body. Non-syphilitic psoriasis, when it is scattered in patches over the surface, always prefers the outer and rough aspect of the limbs. In syphilitic scaly eruptions, the desquamating patches are often widely spread over the body, without attacking the special sites of simple psoriasis, and show a preference for the inner over the outer aspects of the limbs.—6. *The form and arrangement* of the spots and patches in syphilis are often arches or circles, or segments of circles; a disposition less frequent in non-syphilitic skin-diseases.—7. *Multifarious character of the eruption.* A character seldom failing to the syphilitic eruptions is their *association together;* the papules appear among the maculæ, the scaling patches co-exist with mucous patches, or with pustules and vesicles of the scalp. This inter-mingling of different eruptions is very unusual except in syphilis, where they have a common exciting cause. In 153 patients with maculæ, Bassereau found only 28 free from some other eruption.—8. *Transformation of one form into another* is often observed when there is opportunity for watching the progress of the disease. It is not unfrequent to perceive smooth papules become rough with desquamation, or, if kept moist, develope into mucous tubercles. 9. A most important diagnostic sign is the *presence of other syphilitic affections in other organs,* for instance, in the lymphatic glands, the throat, &c. These peculiarities more or less accompany all the early syphilitic eruptions.

" The later eruptions, which appear when the disease is losing its activity, have not so goodly a collection of special characters. They are seldom spread widely over the body, but more often limited to a very small part of its surface. The brownish tinge is well marked from their chronic course. They often cause considerable destruction of tissue by slow ulceration or suppuration, and therefore their sites are marked by scars. They are often the sole evidence of active syphilitic disease. Under proper treatment they commonly heal rapidly. They have an exceedingly slow course, and are apt to recur again and again."

He shows clearly that the old notion that certain late symptoms are due to a combination of the baneful effects of mercury, and

syphilis rests on no solid foundation, but that whatever harm the mineral does to the syphilitic it does equally to those who are obliged to use it under other circumstances.

Of the chronological arrangement, Mr. Hill makes little use in describing the so-called secondary and tertiary manifestations. He treats of the general phenomena of syphilis according to the structures affected.

Taking up in succession eruptions of the skin, lesions of the alimentary canal, the air passages, the bones, muscles, tendons, joints, heart and blood-vessels, the brain and nerves, and the genito-urinary organs. Here, likewise, we must say, we think his plan not so likely to leave in the mind of the student, who has seen but little of the disease, a true conception of its course.

As to the treatment of the disease, and more particularly as to the use of mercury, his views are in the main similar to Dr. Barton's. If future experience confirms the former author's rules as to the cases suited for iodide of potassium, their importance cannot be overrated. Mr. Hill's directions on this point are not so precise. He says, the iodide is chiefly beneficial in the late stages, and among the special cases for which he recommends it, he enumerates affections of the brain. Here we do not quite agree with him; on the contrary, if, under affections of the brain, he includes, as we presume he does, meningeal lesions, our experience leads us to repose our confidence generally in mercury.

A favourite with the author in the late forms of the disease is the freshly formed biniodide of mercury, which he makes according to the following formula:—

> Perchloride of Mercury, grs. 3
> Iodide of Potassium, grs. 96.
> Compound Tincture of Bark, $\mathfrak{z}$ 4.
> Sesquicarbonate of Ammonia, grs. 60.
> Water to                    $\mathfrak{z}$ 8.

Of this he gives two tea-spoonfuls, thrice daily, half an hour before meals. In the concluding direction we cannot concur with him, as we invariably find it safer to give the more active mercurial preparations after food. In some obstinate cases he ventures to use as much as forty grains of the iodide of potassium, thrice daily. We have never given it so freely, but we are quite satisfied that unexpectedly happy results will sometimes be obtained by its administration in quantities much larger than those usually prescribed.

In Dr. Barton's first chapter he quotes for us Diday's tabular statement of the points of difference between the local sore and the true syphilitic one. When Mr. Hill comes to treat of the former he supplies us with a more extended one taken from the valuable work of Clerc; he says:—

"It is usually easy to decide whether a sore on the genitals is derived from a local contagious ulcer if attention be paid to the distinctions that will be immediately enumerated. It is true, there is sometimes a difficulty in deciding that syphilis has not been imbibed at the same time as the local irritant. This difficulty is impossible to solve in all cases if the source of the sore is uncertain, and if the period necessary for the incubation of syphilis has not elapsed when the examination is made. In practice, nevertheless, such instances are not common; in the great majority of venereal ulcers, a positive opinion can be given at once, and for the rest, a short period of observation suffices for deciding the question, by the speedy appearance of the changes peculiar to syphilis betraying the presence of that disease. The differences between the local chancre, and the primary manifestation of syphilis, are contrasted in the following parallel paragraphs. They are altered from those of one of Clerc's pupils, M. Blacheyre."

## DISTINCTIONS BETWEEN THE LOCAL ULCERS AND THE PRIMARY MANIFESTATIONS OF SYPHILIS.

| LOCAL ULCER. | SYPHILIS. |
|---|---|
| 1. *Incubation nil;* irritation is at once displayed by reddening and speedy ulceration of the point of contagion. | 1. Incubation is always of some length; the average being twenty-four days. |
| 2. Ulceration frequently begins by a pustule. Ulceration is an essential condition, and is always very active during the first few weeks. | 2. The manifestation begins by a papule. Ulceration, if accidental irritation is absent, is never active. Superficial erosion is sometimes present as soon as induration begins, but even this is often delayed till the induration is far advanced, and may be altogether absent. |
| 3. The virulent character of the ulceration, gives the sore its tendency to enlarge, and its long duration, extending in mild cases six weeks, in severe ones much longer. | 3. The indolent character of the ulceration, of which the duration is uncertain, and depends on the condition of the patient. |
| 4. The *aspect of the ulcer is characteristic;* it is hollowed, the surface is spongy and undermined; the edges are sharply cut, and the discharge is opaque, yellow, and plentiful. | 4. The *aspect of the papule is characteristic;* it is often not ulcerous, but simply eroded, or desquamating. When the surface is ulcerated, it is smooth, and covered with adherent, scanty secretion. The edges are not undermined, but raised, sloping, or rounded. |

## LOCAL ULCER.

5. The base of the sore is supple, unless thickened by inflammatory congestion; but this pseudo-induration disappears when the inflammation is subdued.

6. Multiplicity of the sore is the rule. This results from the consecutive inoculations of the parts around with the discharge of the original sore.

7. The lymphatic glands remain either unaffected, or become acutely inflamed, and form abscess, or bubo.

8. The matter of these buboes is often inoculable on the bearer. If so, it is pathognomonic of chancre; it also converts the bubo into a chancre.

9. However long the chancre lasts, it remains a local disease.

10. Phagadena and ulceration of inflammatory kind are frequent complications.

11. Pain in the sore is usually sharp, often severe.

12. Seldom met with away from neighbourhood of the genital organs.

13. The source a similar ulcer.

14. Antecedent to the disorder, the patient may or may not have had syphilis, and may have had similar ulcers several times before.

15. The secretion of the sore is inoculable on the bearer, until cicatrization is advanced.

16. The discharge is also inoculable on animals.

17. It may be many times repeated in each individual.

## SYPHILIS.

5. The base of the papule is of gristly hardness, quite independent of inflammatory action; is peculiar in character; very rarely absent in men, and generally present in women. It usually lasts several months before it disappears.

6. The papule is habitually solitary. When there are more than one the papules are all of one age.

7. The lymphatic glands are almost invariably affected by slow, irregular enlargement of the whole group, at a certain length of time after infection, but suppuration is infrequent, and when present is the consequence of ordinary irritation.

8. When abscess forms around the enlarged lymphatic glands, it is not inoculable on the bearer.

9. Between two and three months after contagion, erythematous and papular eruptions appear on the surface of the body.

10. Any inflammation or extension by ulceration is rare.

11. Absence of pain.

12. Tolerably frequently met with on parts away from the genitals.

13. The source is most usually an ulcerating papule of a syphilitic eruption.

14. Antecedent to this, the patient has not had syphilis, or such a hard-based ulcer.

15. The secretion is very rarely inoculable on its bearer, and so only when its surface is irritated into acute suppuration.

16. The discharge is not inoculable on animals.

17. It is only once developed in each individual.
Exceptions to this are too rare to invalidate the rule.

Mr. Hill's directions for the treatment of the local sores, and their various complications, and for the management of gonorrhea, are full and precise. In that most intractable disease, gonorrheal rheumatism, our own experience long since satisfied us that instead of there being anything metastitic in it, the more virulent the urethral inflammation the more painful is the arthritic mischief, and the sooner you cure the former the sooner you will get rid of the latter; and in this we find Mr. Hill's opinion coincides with our own. Thoroughly acquainted with the literature of the subject, and, what is more important, thoroughly familiar with the phenomena of venereal disease from actual observation, Mr. Hill's work proves him to be a safe and judicious practitioner.

On the great work of Launcereaux we do not mean to offer any criticism; the frequent references to it in every recent essay on syphilis proves it to be a mine of wealth. The object and scope of the treatise is thus stated in the preface :—

" The natural sciences have succeeded, for the most part, in classifying the objects with which they are engaged under a certain number of well-defined types, each of these types giving the notion of all the individualities belonging to it. Pathology, also, ought to possess an analogous classification, for the organopathic conditions of man present distinct types, always recognizable by constant characters, which permit of grouping them so as to constitute morbid species. But if, amongst the acute diseases, we know the detailed history of several species, it cannot be denied that in the domain of chronic diseases we are much less advanced. I have, therefore, thought it useful to follow in its minutest details one of these diseases.

" For this purpose, I have chosen the disease which, both by its origin and by its multiple manifestations, is best fitted for an exact, complete, and varied study. I mean Syphilis. I have sought to trace out its history, not after the manner of the specialist, whose view does not extend beyond the horizon of his speciality, but after the manner of the nosographer, who finds in it only a detached chapter in the great history of diseases.

" This book is divided into six parts : Historical Notice, Nosography, Semeiology, Ætiology, Treatment, and Legal Medicine."

The arduous task so undertaken has been performed with rare industry and ability. The work must ever remain one of our most valuable books of reference; the Sydenham Society have wisely selected it for translation. When the second volume comes to be

published, we hope a table of contents of the whole will be added. Eminently a work of reference, and eminently a work in the arrangement of which the convenience of the reader is less consulted than the regular and systematic treatment of the subject, the absence of any table of contents detracts most seriously from the value of the Translation.

Dr. Hughlings-Jackson's pamphlet is a reprint from " The Transactions of the St. Andrews' Medical Graduates' Association," of eight interesting cases of " Disease of the Nervous System in Patients the subjects of Inherited Syphilis," and contain several suggestive and valuable comments. In establishing the diagnosis of congenital syphilis, the author attaches great weight to the examination of the teeth, convinced that the dental malformation characteristic of syphilis is very inaccurately conceived by many. We extract Dr. Hughlings-Jackson's description of it:—

" It is to be particularly observed, that although Mr. Hutchinson has described many dental peculiarities in children, he relies only—for a test of congenital syphilis—on a *certain* malformation of the two upper central incisors of the *permanent set*. Normally these teeth are chisel shaped, *i.e., broader* at their cutting edges than at their insertions into the gum. The malformation which Mr. Hutchinson has discovered to be a sign of congenital syphilis consists (First) in a reversal of the normal shape so far as this, that the two teeth above-named are *narrower* at their cutting edges than at their insertions into the gum. Hence they are then, as Mr. Dixon has observed, like ' screw-drivers.' (Second)—The teeth are often notched. Hence such teeth are often called ' notched teeth.' It is well to add that Mr. Hutchinson attaches no special importance to ' bad teeth,' to ' irregular teeth,' &c., but, I repeat, to a particular kind of malformation of two of the permanent teeth."

Dr. Oppert has evidently an acquaintance with the literature of his subject, which in the hands of many men would have supplied materials for a bulky volume. He reminds us, in language singularly brief and concise, of the various visceral lesions which have been found by various pathologists in the subjects of syphilis, so that we may be on the look out for them. In treating them, he relies mainly on the iodide of potassium.

1. *Traité Expérimental et Clinique de la Régénération des Os et de la Production Artificielle du Tissu Osseux.* Par L. OLLIER, Chirurgien en Chef de l'Hôtel-Dieu de Lyon. Tom. II. Victor Masson. Paris: 1867.

1. *Experimental and Clinical Treatise on the Regeneration of Bone, and the Artificial Production of Osseous Tissue.* By L. OLLIER, Senior Surgeon to the Hotel-Dieu of Lyons. 2 Vols. Victor Masson. Paris: 1867.

2. *De l'Evidemēnt sous-périosté des Os.* Par M. le Docteur SEDILLOT, Professeur de Clinique Chirurgical a la Faculté de Médicine de Strasburg, &c., &c. Deuxième edition, pp. 438. J. B. Baillière. Paris: 1867.

2. *On the Sub-periosteal Evacuation of Bones.* By Dr. SEDILLOT Professor of Clinical Surgery to the Faculty of Medicine, Strasburg. Second edition, pp. 438. J. B. Baillière. Paris: 1867.

THE authors whose works stand at present before us differ from each other considerably in their views as regards the surgery of the osseous system. The work of Dr. Sédillot is, in fact, in a great degree a critique upon the experiments and conclusions of M. Ollier, and we must say a critique which does not appear to us quite fair and impartial. Both, however, are works well worth careful perusal; both deal with a subject the importance of which, in the eyes of the practical surgeon, cannot be overrated; both appeal to physiological experiment as well as clinical research. The authors evidently pride themselves not less on their bedside observations than on the scientific merits of their works; one, paying homage to science, dedicates his volume to M. Flourens, while M. Ollier, devoting one volume to the experimental portion, and the second to the clinical, names Claude Bernard and Velpeau, as those to whom he would inscribe his work.

We do not mean to follow Dr. Sédillot too closely in his criticisms, feeling convinced that we shall meet the requirements of our readers much better if we endeavour to give, in as concise a manner as possible, an analysis of the views of each author.

Before M. Ollier no physiologist had transplanted periosteum or any of the other elements of bone. It was he first took up the idea

of removing the periosteal membrane from its proper bed, and either placing it in a new position among the neighbouring muscles, without entirely detaching it or depositing it in a new place altogether. In fact, transplantation of bone, and the making of osseous grafts, was new in his hands, and whether his investigations may yet bear all the good fruit he expects, there can be no doubt but that his method of experimentation has thrown additional light on the natural history of bone development and growth.

Havers attributed the growth of bone to the canals which still bear his name. According to him, the periosteum performed no bone-forming function; on the contrary, he viewed it as a membrane which limited the extension and increase of bone. Even after Duhamel's memoir appeared, this idea still prevailed. We find Bichât himself in part adopting it, for he says, in his *Anatomie Générale:*—" The periosteum is a kind of limit which circumscribes within its natural bounds the progress of ossification, and prevents it from passing into irregular aberrations."

It was by studying the progress of union in broken bones that Duhamel became convinced of the important office filled by the periosteum in the formation of bone; he observed this membrane at first becoming tumefied and afterwards being transformed into cartilage, and later into bone. He saw that it became tumid over the ends of the fragments, and, becoming interposed between them as it were, soldered them together. In order to investigate more thoroughly this transformation of the periosteum, he made a hole in the substance of a bone and found that the periosteum sunk into the hole and became transformed into cartilage first and then bone. He regarded the periosteum as the agent of cicatrization of osseous wounds, and concluded from his various experiments that ossification is nothing more than the incrustation of the proper substance of the periosteum with calcareous matter. He afterwards somewhat modified this opinion. He concluded that it was not, properly speaking, the periosteum itself, but a matter interposed between it and the bone which furnished the elements of ossification. This idea he formed from a fancied analogy between the periosteum and the bark of trees. The layers of bone were formed, as he conceived, from this intermediate substance as the layers of wood by the organization of the cambium.

Duhamel's views were different from those of Haller; the latter believed that fractures were united by the aid of a juice exuding from the bone and the marrow; according to him the periosteum

took no active part in bone formation—it neither produced the bones nor formed the callus.

We find, therefore, that Duhamel's ideas were very much in harmony with the modern doctrines regarding the evolution of tissues. The early microscopists had affirmed the old doctrine of reunion and cicatrization of tissues by means of an exuded fluid. In this exudation (cyto-blastema), by a sort of spontaneous generation, the cells or nuclei destined to form the future cicatricial tissue became developed. Lymph plastic or coagulable, nutritive juice, osseous juice, jelly of Troja, exudation of the microscopists, are in reality all terms merely expressing this theoretic idea.

Of late Virchow has protested strongly against this view, and the majority of histologists are now of his opinion. He says there is no spontaneous generation of the elements. The cells of a cicatrix arise from the cells of the connective tissue already existing. There is, therefore, no plastic lymph poured out, and callus cannot be the result of an exudation between the periosteum and the bone; what has been mistaken for it is the tumefied periosteum, the cellular elements of which are reproducing themselves by proliferation. It will be seen, then, that between Duhamel and Virchow there exist merely such differences as are due to the difference of the language and forms of expression at the time each wrote. Under the influence of Bichât and Scarpa the ideas of Duhamel lost ground; and it was not until Dupuytren advocated them, and Stanley and Syme showed that resections practised on dogs were followed by regeneration of bone when the periosteum was preserved, that its true importance was at last assigned to this membrane by surgeons.

M. Ollier's experiments upon the artificial production of bony tissue by the displacement and transplantation of periosteum are perfectly conclusive; and as the writer had an opportunity of seeing M. Ollier's preparations (which were exhibited some years ago at a meeting of the British Association at Oxford) he can speak with confidence upon the subject. His fundamental experiments are as follows:—

1st. Dissection of a flap of periosteum left attached to the bone by one of its extremities; this flap was curled round among the neighbouring muscles.

2nd. Dissection of a flap of periosteum, also curled round among the neighbouring muscles; but the pedicle by which it remained

connected to the bone was cut on the third and fourth day after the operation.

3rd. Dissection of a flap of periosteum and its immediate transplantation into a locality remote from that whence it was taken.

In every one of these experiments M. Ollier found that there was a development of osseous tissue in the periosteal flap.

That the marrow is not essentially necessary to the nutritive growth and development of bone, or to the regeneration of bone such as occurs in the union of fractures, is obvious from the fact that these processes take place in the bones of birds in which no marrow exists. The part which it does play as regards ossification, and the nutrition of bone in those animals in which it exists, has also been made the subject of experimental research by M. Ollier. He has proved that the marrow does not, like periosteum, ossify after transplantation; it does, however, undergo ossification when, still within its medullary canal, it is isolated by the introduction of a metallic tube around it. There must be, as appears from his experiments, a certain amount of irritation in order to induce ossification in the marrow; pathological observation leads to the same conclusion as in those cases where the medullary cavity of bones becomes filled up; there has been a chronic form of osteomyelitis producing in the marrow an irritation, gradually terminating in its more or less complete ossification. Experimental operations upon animals, in which the marrow is destroyed, are attended with the gravest consequences, a large proportion falling victims to purulent infection; and these results are only too much in harmony with what surgical experience tells us to be the case in man. Penetrating wounds of bones, with injury to the marrow, are always serious, especially in ill-ventilated hospitals, or camps.

The marrow is endowed with a very pronounced vegetative activity; its cells undergo proliferation with great rapidity. In rabbits and dogs, where the entire marrow in the shaft of the tibia has been destroyed, at the end of twenty-five to thirty days the whole medullary canal is found filled either with new marrow or with osseous tissue. In fact, the reproduction of the marrow goes on very rapidly: when, for example, the quarter of the contents of the medullary canal of a young rabbit's tibia is removed, the marrow which remains begins to vegetate, and at the end of five or six days the canal is no longer empty.

The elements contained within the Haversian canals are not without their influence on the nutrition of bone. Even when the periosteum

has been stripped off and the marrow simultaneously evacuated, M. Ollier has found that necrosis did not follow; on the contrary, the medullary canal became again filled with a spongy tissue, and there was hypertrophy of the bone above and below the part denuded of its periosteum.

In the first chapter of his second volume M. Ollier speaks of necrosis in man and of the regeneration of necrosed parts. His definition of necrosis differs in some respects from that of other writers, and the varieties are described by him in a clear and practical way.

" Sometimes," he says, " the necrosed parts resemble a portion of healthy bone; sometimes they have the aspect of diseased bone. In the first case the sequestrum presents to the naked eye, as well as to the microscope, the character of normal osseous tissue; in the second, it resembles inflamed osseous structure, generally speaking, rarified, sometimes eburnated, the death of the portion not changing its primitive characters.

" This difference of aspect indicates to us the chief mode in which necrosis takes place. In the first case the bone dies without previous disease : it passes rapidly under the influence of acute inflammation from the state of life to that of death. This may be called *primitive* necrosis. In the second case, the bone is already diseased when it becomes necrosed; it has already undergone changes under the influence of inflammation ; it has become rarified, vascular, and softened. The death of the bone has come on secondarily and often long after the commencement of the affection. This may be called *carious or secondary* necrosis.

" Between these two typical forms there is room, no doubt, for intermediate varieties, as between the gangrene of a limb produced rapidly under the influence of an obliteration of the main artery and the loss of this member by successive mortification of its various elements, as may occur under the influence of some less acute form of inflammation or phagedena.

" These two kinds of necroses differ from each other notably as regards the regeneration of bone.

" After a *primitive* necrosis the periosteum, if it has not been itself destroyed by the violence of the inflammation, soon sets about reproducing new bone. The inflammation once passed, the formative irritation persists in the ossifiable tissues, and regeneration goes forward.

" After *carious or secondary* necrosis, on the contrary, the original disease goes on its own course, if the general conditions on which it depends still persist. The necrosis is merely an accident of the disease ; in this case it is not the termination of it.

" The separation of the bone does not go on because the tissues which ought to contribute to it are themselves diseased ; it is limited to some osteophytic growths. The periosteum, in a fungoid state, is more or less destroyed at the seat of the disease ; and if art does not interfere the malady has little tendency towards cure. The sequestrum not being in this case the entire disease, it is necessary to attack the caries itself. . . . . . Primitive necrosis gives us absolutely the same results as the artificial necrosis produced upon animals. The osseous tissue of man behaves in the same manner, and the examination of clinical facts conducts us to the same conclusions as experimental facts."

M. Ollier, from his experimental, as well as his pathological observations, has been led to repose great confidence in sub-periosteal resection of bone attacked by carious necrosis. He details at great length his operative proceedings, and very fully describes the instruments which he employs. He lays much stress upon free incisions, giving sufficient room, not dividing muscular structure if it is possible to avoid this by cutting between muscles. Care must be taken not to sever tendons, the attachments of which to the bone are to be separated with the greatest caution. The periosteum itself is to be stripped from the bone, without being separated from the surrounding soft parts, and the bone divided with a chain saw, or removed by the gouge and mallet, as the case may be. Perhaps an idea of his method may best be formed by detailing one of his cases :—

" CASE XXVII.—*Caries of the Great Trochanter—Sub-periosteal Resection—Cure.*—Marie Bastin, aged thirty-two years, admitted to hospital 4th of May, 1863. Twelve years ago the patient had a large abscess in the region of the trochanter, due probably to inflammation of the bursa in this locality. This was freely opened by Dr. Barrier, and the patient got well. · In 1861 the symptoms re-appeared, and a new abscess formed ; no sequestrum came away ; the abscess got well after long suppuration. Before admission, May 4th, 1863, there existed a fistulous trajet, with subcutaneous burrowing, on a level with the trochanter. An abscess had burst spontaneously at the site of the first cicatrix, and a probe, passed upon the denuded bone, was found to enter into a cavity without detecting any movable sequestrum. Repose and constitutional treatment was ordered for the patient until the end of July, but as the local affection was not improving, operative interference was determined upon. On July 29th a longitudinal incision was made upon the cicatrix of the first operation down to the bone, when a cutaneo-periosteal flap was detached on each side, the detachment being facilitated by a small cutaneous

incision at right angles to the first. In this manner the great trochanter was entirely laid bare, as far as its base, and on account of the friability of its tissue, it was attacked with the gouge. Martin's saw would have been used had it offered too much resistance to the first instrument. The whole of the diseased portion was circumscribed by means of a chisel, driving in this instrument by means of a mallet to the depth of five or six milimetres—then, with an elevator, all this circumscribed portion was detached in one piece. With the gouge the rest of the fungous and carious parts were taken away, and the wound cleaned. All the softened portion was removed. The wound was stuffed with charpie, and the patient's limb placed in a Bonnet's splint, so as to prevent violent or irregular movements.

" 30th.—Patient complains of pain in the foot of the side operated upon.

" 31st.—Pain in the foot moved to the knee; no swelling in either foot or knee; pulse quick; retention of urine.

" 2nd of August.—Abundant fetid suppuration; general condition better; is able to pass water. Wound dressed with powdered charcoal, quinine, and camphor.

" From this day the general and local condition went on gradually improving; by the middle of September the patient began to get up; in November she went out daily, walking with a stick.

" When examined on the 3rd of January—that is, five months and five days after the operation—she was in the following condition:— Wound completely cicatrized long since; at the level of the trochanter there is felt a hard mass fixed to the bone, and with difficulty isolated from the surrounding soft parts. Viewed from before, the trochanteric region appears as prominent as that of her opposite side; viewed laterally, it is traversed by a depressed cicatrix, which is adherent to the bone. It is then seen that the deficiency of bone is not completely supplied. The patient walks without lameness when not hurried."

In the concluding volume of his remarkable work, M. Ollier, by a large number of cases, fully substantiates the assertions put forth in his introductory pages. He first examines the subject with reference to the regeneration of bone in consequence of spontaneous necrosis; then the reparation of losses of substance engaging bone to a greater or less depth; finally, he comes to the real question at issue—viz., concerning the regeneration of bone after its sub-periosteal resection; that is to say, its regeneration by the isolated periosteal investment. He convinces us by positive facts that bone tissue may be formed in man by the same elements, and under the same conditions, as in the other mammalia on which he has experimented.

Whether operation by sub-periosteal resection may bear such good fruit in the hands of other surgeons as in those of M. Ollier remains to be seen; but even making some allowance for the author's enthusiasm concerning a subject which he has done so much to elucidate, we do not hesitate to pronounce his work one which has added much to the progress of scientific surgery.

Dr. Sédillot is entirely at variance with the advocates of sub-periosteal resection. His work, as he himself tells us, does not pretend to be either a monograph or a dogmatic treatise. It is in fact a series of works which he has undertaken and published since 1858, upon what he has named "l'Evidement des os," as a means of preserving the form and functions of the bone, and of avoiding amputation.

The doctrine on which the practice of "Evidement" is founded rests upon the general fact that every portion of healthy bone, clothed by still adherent periosteum, aids in the reproduction of bone by the proliferation of its sub-periosteal cells, interstitial as well as medullary. This regenerative process is found to be very active in cases where the bones are bruised or cauterized, in a word, submitted to injury, the consequence of which is, that the bone tissue gains a power of growth and development similar to that which it enjoys during fetal and early life.

"L'Evidement" is an operation whereby we, as it were, dig out and excavate a bone, so as to remove the diseased parts and leave behind only the healthy portion. The form of the limb is unaltered, the attachments of muscles are preserved, the periosteum remains intact, and the osseous reproduction takes place underneath this membrane, and in the interior of the bone which has been emptied of its diseased contents. Such is Sédillot's definition of his process, and from this it appears that, except in name and in improved instruments for the purpose, the procedure differs little, if at all, from the method of dealing with certain diseases of bone from time immemorial.

When we read the third chapter of the eighth book of Celsus, to say nothing of writers comparatively later, we cannot say that we find much novelty in the surgical proceedings which have been from time to time set forth anew for the treatment of bone diseases. Whether it be the mallet and gouge, the actual cautery, the trephine, lapis infernalis, or some such active caustic which is called into requisition, yet it is certain that one and all of these means

were in use among the ancients, with the view of getting rid of the diseased portions of the bone, and with the advantage of exciting oftentimes healthy and vigorous inflammation in a part hitherto the seat of strumous or other chronic disease.

The truth appears to us to be that surgery has not made so much advance in striking out new plans of procedure as in discriminating the cases for which each procedure is best, and, perhaps, most of all, in determining those in which it is advisable to shun operative interference altogether.

The following are the indications which, according to Dr. Sédillot, point out the cases which he considers to be the most favourable for his method of treatment:—

" 1st. Cases of suppurating osteitis maintained by the presence of sequestra, or consequent upon the elimination or extraction of these foreign bodies.

" 2nd. Cases in which a sequestrum, embedded and retained in contact with osseous structures inflamed and carious, brings on grave symptoms, and demands prompt and energetic surgical intervention.

" 3rd. The fatty ramollisements, with partial suppuration of the spongy tissue of the bones, and particularly of their extremities.

" 4th. Purulent infiltrations, deep or central caries, certain forms of osteo-myelitis, cases of osteitis, either acute or chronic, where the symptoms are sufficiently grave.

" 5th. Tuberculization with excavation and partial destruction of the extremities of the bone; fibrous, vascular, and encysted tumours of bone.

" 6th. Enchondromata limited to a part of the length of a bone.

" 7th. Even in cases of articular resection much loss of substance may be avoided by ' Evidement.' "

Dr. Sédillot thus describes his method of operating:—

" A longitudinal incision is first made, engaging as much as possible the fistulous trajets, and at a point where the bone is most superficial, most accessible, and most removed from vascular and nervous trunks. The soft parts and the periosteum are next divided as far as the limits of the osseous lesion. Two other incisions at right angles to the extremities of the first serve to form two flaps, more or less prolonged, according to the surface which it is necessary to lay bare. These flaps are turned back on each side with their accompanying portions of periosteum, carefully separated from the subjacent bone.

" In other cases we form a single oval flap, falling again over the wound by its own weight, as we have established in our method of amputation. In other patients we confine ourselves to a simple linear

incision, slightly bent at its extremities, and we may add that all these forms of incision are applicable to exceptional indications.

" The bone thus laid bare and already affected with fistulous openings, with loss of substance more or less extensive, separated by intermediate bridges, infiltrated, softened, hollowed out by suppuration or caries, is forthwith attacked by the gouge, the chisel, and the mallet. The gouge is particularly useful for ' Evidement,' and we have had some of them constructed in the form of worm screws or augurs of various models, and fixed in wooden handles so as to be worked by the hand without percussion. The bones often offer so little resistance, especially in the interior of their articular extremities, the excavation of which we have effected in certain cases, that the employment of this instrument is very convenient, and frequently is sufficient to complete the operation. The chisel is reserved for section of the osseous bridges, and to make even the borders of the wound ; various kinds of saws can also render good service. Thus we penetrate into the medullary canal, digging and scooping out so as to remove all the altered portions, and reduce the bone to a peripheric shell of healthy tissue, which preserves its form, its dimensions, and its relations. The periosteal investment, the tendons, the muscles, and ligaments are completely preserved. . . . . . . The ' Evidement' completed, we fill the cavity of the bone and the external wound with soft charpie, and do all we can to prevent the retention of the liquids and the terrible complications which result therefrom."

We leave our readers to decide whether there is, after all, anything in the practice here described very different from what they have seen done over and over again, before Dr. Sédillot published his first memoir. Yet, although we cannot yield to the author the merit for originality which he would claim, we are very far from implying that his work is not a valuable one. Cases are always interesting, and he has brought together many most important cases. There is much critical acuteness in his observations, and his critique on the subject of sub-periosteal resections and osteoplastie, by the displacement of periosteal flaps, contains much which will amply repay perusal.

1. *A Practical Treatise on Bright's Diseases of the Kidneys.* By
   T. Grainger Stewart, M.D., F.R.S.E. Edinburgh: A. and
   C. Black. 1868. Pp. 188.

2. I.—*On Certain Points in the Anatomy and Pathology of Bright's
   Disease of the Kidney.* II.—*On the Influence of the Minute Blood-
   Vessels upon the Circulation.* By George Johnson, M.D.
   *Medico-Chirurgical Transactions*, p. 57. London: Longman,
   Green, and Co. 1868.

Dr. Grainger Stewart has collected, into a handsome and well
illustrated volume, his observations on diseases of the kidney, most
of which have already been brought under the notice of the pro-
fession in the medical journals.

The author prefers to employ the name " Bright's Diseases," for
the affections which he describes, on the ground that, while it is
desirable to retain the name of Bright in connexion with the
maladies, for a knowledge of which we are indebted to his
sagacity, it is also necessary that they should be fully recognized
as distinct morbid conditions. He classifies them under three
forms:—

" 1. *The inflammatory form,* of which there are three stages:—
  " *a* That of inflammation.
  " *b*    „    fatty transformation.
  " *c*    „    atrophy.
" 2. *The waxy or amyloid form,* of which also there are three stages:—
  " *a* That of degeneration of vessels.
  " *b*    „    secondary changes in the tubes.
  " *c*    „    atrophy.
" 3. *The cirrhotic, contracting, or gouty form.*"

Dr. Stewart excludes as spurious from his classification the con-
gestive form described by Frerichs, Rosenstein, and others. This
limitation seems to us somewhat arbitrary. The morbid state of
kidney brought about by chronic congestion, and accompanied by
albuminous urine, has a clear right to be included with the forms
described by Dr. Stewart, with which it has certainly a patho-
logical kinship.

The first stage of Dr. Stewart's first form corresponds to the
acute stage of the tubal inflammation, in which the kidney is con-
gested, often red, and usually somewhat enlarged.

The second stage, or that of fatty transformation, corresponds to the large white kidney; and the third stage corresponds to the small, smooth kidney of other authors.

We do not believe that the present state of our knowledge enables us to affirm the invariable occurrence of an inflammatory process as an antecedent of the stages described as the second and third. That inflammatory action is often the starting-point of the disease is undoubted, but that in many cases no evidence of previous inflammation is to be met with is, we think, equally certain; the changes in many instances presenting, from the outset, more of the characters of degeneration than of inflammation.

In the treatment of this form of disease, the author advocates the employment of diuretics in accordance with the views which are generally entertained in Edinburgh, and he recommends that the patient should be encouraged to take as much water as possible. He seems to attach very little importance to the employment of purgatives, and to the use of diaphoretics.

" As to the rationale of these different plans of treatment, the leading idea of those who exclusively employ cathartics and diaphoretics is, that they relieve the system of water and urea, while the kidneys are allowed to rest; and this is deemed by them of great importance, inasmuch as it is assumed that rest is an essential point in the treatment of inflammations, and stimulating inflamed kidneys to increased action is in direct opposition to this general principle. But experience has abundantly proved these views erroneous, and has fully established the value of the treatment which the pathology of the disease suggests. The danger to life results from the occlusion of the uriniferous tubules, obviously then, the clearing out of these tubules must be desirable. If they be well cleared out, the kidney has a much better chance of being restored to a healthy state. I have satisfied myself that, when the old disorganized epithelium of the tubules has been removed a new epithelium is formed; but such a formation cannot take place unless the old be carried away. It thus appears that, even if it were possible to eliminate by the bowels or skin the amount of water, urea, and other urinary ingredients which should naturally be passed off by the kidneys, it would afford no ultimate gain to employ this method, for, the renal tubes remaining obstructed no new epithelium could be produced, the old structures, which were not washed away by streams of urine, would be slowly absorbed into the system, and tubule by tubule the organ would atrophy. On the other hand, if, by the action of digitalis, or oil of juniper, or cream of tartar, we can lead to a copious transudation through the vascular tufts of the

Malpighian bodies, we wash away the morbid material which obstructs the tubules, we give the kidney the opportunity of forming new epithelium, and of returning to a normal condition."

On this subject we would observe that the production of an increased transudation through the Malpighian capillaries is not, by any means, so simple and mechanical a matter as Dr. Stewart's remarks would imply. These vessels are, in the early stage of the disease under consideration, gorged with blood, dilated, and probably weakened. The fluid which they furnish is highly albuminous, and often mixed with blood.

It may be fairly taken for granted that increased arterial pressure would lead to the escape of a fluid still more highly charged with albumen, and probably also to rupture of some of the vessels, and consequent extravasation of blood. Now that hemorrhage into the tubules is likely to be followed by more serious injury to the secreting structure than the presence of the shortlived products of the inflammatory process, will hardly be denied. Dr. Dickinson, himself a supporter of the diuretic plan of treatment, admits that hemorrhage is a rather frequent concomitant of the extraordinary mode of managing the disease advocated by him—namely, the administration to the patient of considerable quantities of water. Besides, an increased flow of water through the kidney, if it were practicable to bring it about by increased vascular pressure, would tend to stimulate the functional activity of the gland, as it does in health, and thus further irritate an organ already in a high state of irritation. Surely both experience and common sense are opposed to any measure calculated to add to the congestion of an already congested organ, or calculated to throw any strain on a part which is weakened by inflammation. It must be remembered, in addition, that the draining off of the water of the urine being the sole function of the Malpighian capillaries, although probable, is by no means certain. Kölliker's observations, which have been supported by recent investigations, point to the possibility of the solids of the urine being in part secreted from them. The deliberate administration of large quantities of water to patients whose organs are already overburdened with fluid, certainly appears to us to be a practice which can be dictated only by theoretical considerations, and which is not likely to commend itself to the judgment of the profession.

On the subject of the amyloid, or waxy form of Bright's

disease, the observations of the author are of much interest. Following Virchow, he regards the vessels as the first of the anatomical structures of the kidney to become affected with the amyloid change.    In his recently published paper, to which we shall have afterwards to allude, this history of the process is denied by Dr. Johnson, who states that in the early stage of the waxy or amyloid degeneration, the arteries are either unchanged or simply hypertrophied, and that it is only in the advanced stages of the disease that the small arteries and the Malpighian bodies present evidences of the amyloid change, which he believes to be due simply to infiltration of albuminous or fibrinous material into the walls of the vessels.   So long as the vessels alone are affected, Dr. Stewart states that the kidneys are unchanged in bulk, but that when the second stage, or that of transudation into the tubules, is reached, the organs present an augmentation of size. This increase he regards as dependent on the distension of the tubules by a material which somewhat resembles the amyloid substance, but which does not exhibit the red colouration on being treated with iodine, which is so characteristic of that substance. The author does not appear to have met with cases such as have been described by Dr. Dickinson, in which almost the whole of the substance of the kidney presents the iodine reaction.

Dr. Stewart lays much stress on the increased quantity of urine in cases of the amyloid kidney.   In all of the cases observed by him, polyuria was observed, except where severe diarrhea was present, or where there was inflammation of the tubules, or syphilitic deposit in the stroma of the organ.

With regard to the cause of the amyloid degeneration, the author gives as the result of his experience, that in 18 cases of the disease, in which *post mortem* examinations were made, and of which the antecedent history had been carefully recorded, 7 were certainly, and 1 probably, syphilitic; 4 presented pulmonary tubercle; 2 caries of bone; 1 chronic rheumatism; 1 cancer; and 2 stated that their illness had not been preceded by any particular disease.   He justly observes that these cases show the incorrectness of the theory advanced by Dr. Dickinson—of the dependence of the amyloid degeneration on suppuration, for in only six of these eighteen cases had suppuration been present.

The author discusses the mode of production of the amyloid material, and, as we think rightly, is in favour of the view that it is a true degeneration—a metamorphosis of tissue—and not a

deposit from the blood. The following remarks on this subject are eminently judicious and cogent:—

" In seeking to solve the question, it is important to distinguish between the waxy degeneration proper and the secondary deposit of fibrinous material which results from it. That it is not an infiltration will become apparent if we consider the parts it affects. We have seen that it affects the cells of the liver. This might well be the result of infiltration, for we constantly see the same structures loaded with fat which has been poured out from the blood. But far more generally throughout the body it affects the small arteries. How is this to be explained on the infiltration theory ? How can it happen that the small arteries—nay, the small arteries of certain organs—nay, the middle coats of the small arteries—should be the chosen seat of deposit of a material poured from the blood? If it be poured out from the blood, why does it so generally confine itself to the walls of arteries and unstriped muscular fibre? Why does it not infiltrate the parenchyma of organs? Why does it, in the intestine, as it flows from the blood, confine itself to the walls of small vessels, to the muscles of Brücke, to the epithelium, why does it not pass out among the cellular tissue of the villi and become deposited there? These questions can scarcely be answered by those who hold the infiltration theory.

" On the other hand, how exactly the characters correspond to those of the degeneration—certain tissues always primarily affected, those tissues presenting every degree of alteration, from the slightest to the most distinct, the surrounding parts remaining unaffected. The closest analogy exists between what is seen in this, and in the atheromatous and calcareous degenerations, the former affecting the inner coat of arteries, and especially the deeper layers, the latter, when primary, affecting the middle coat. Both are independent diseases originating in the tissues, not even secondary results of infiltration."

Much difference of opinion exists regarding the true nature of the morbid change in the granular, red, contracted kidney. In these countries pathologists agree in regarding it as a form essentially different from the large, white kidney. In Germany, however, this opinion is by no means universally entertained. Frerichs, for example, looks upon it as merely a further stage of the large kidney. Dr. Grainger Stewart, who advocates the independence of the two forms of disease, follows Virchow in regarding it as the result of diseased action affecting the interstitial connective tissue, which is found in the kidney, forming a matrix for the tubules. The same view has been strongly urged by Dr. Dickinson in his work on " Albuminuria," and by other pathologists,

and the disease has been regarded as presenting a close analogy to cirrhosis of the liver. Dr. Stewart considers the term cirrhotic kidney as the most appropriate name for the disease, and defines it as consisting essentially of an hypertrophy of the connective tissue of the organ, and a consequent atrophy of all the other structures. The cause of the hypertrophy he does not attempt to explain.

In opposition to the view of the dependence of this form of renal affection on changes in the interstitial tissue, we have the opinions of Dr. George Johnson and of Dr. Beale. Dr. Johnson, whose views on any question connected with renal pathology are entitled to the greatest weight, states that the origin of the diseased condition is to be looked for in changes commencing within and not without the tubules, and that the primary phenomenon is a disintegration of the glandular epithelium. He argues also that the marked vascularity observed in kidneys the subjects of this change, a vascularity to which they owe the name of red granular kidney, is against the idea of an intertubular deposit which might be fairly expected to cause an opposite condition—namely, a state of anemia.

Dr. Beale, who holds that the generally accepted interpretation of cirrhosis of the liver, as caused by the contraction of Glisson's capsule, is erroneous, states, in his recent work,[a] as the result of his investigations, that there is really no connective tissue present at all in the cortical substance of the kidney, apart from the walls of the tubes and capillaries. The tubules and vessels mutually support each other, and any matrix, by increasing the distance between the blood and the secreting cells, would only serve to embarrass the action of the gland. What has been described as connective tissue he believes to be the residue produced by wasted and shrivelled secreting tubules, which is found lying between tubes and vessels which have not undergone change. It is evident that much further investigation is necessary before this question can be definitely settled.

There can be no doubt, we believe, with regard to the marked clinical differences which exist between the cases in which the contracted kidney is found and those which depend on the first form in Dr. Stewart's classification. The copious urine, the slight deposit, the scanty tube-casts, the comparatively small amount of albumen, and the frequent absence of dropsy in the cases of granular

[a] "Kidney Diseases, Urinary Deposits, and Calculous Disorders." London: Churchill. 1869.

kidney form a sufficient body of signs to enable the one affection to be discriminated from the other, with a fair approach to certainty.

An interesting chapter is devoted to the subject of acute atrophy of the kidney. This formidable disease is regarded by the author as occasionally occurring as a primary affection in the kidney, independently of acute atrophy of the liver, with which it is sometimes associated. The following are the characters of the kidney in this affection :—

" The characters of the kidney in both sets of cases are as follows :— They may be of the natural size, rarely somewhat enlarged, and in most cases smaller than normal. I have found the organs to weigh together between 6 and 7 oz. They are flabby and congested, and sometimes blood is extravasated in the cortical substance. The cortical substance, and, to a less extent, the cones, present a dense consolidated, sometimes a sebaceous-looking appearance.

" On microscopic examination, the tubules in the cortical substance, and frequently also in the cones, appear opaque, as if distended with fine injection, and when a higher power is used, a series of changes may be traced identical with those which we find in the cells of the liver in cases of acute atrophy. Some are opaque, swollen, and cloudy, their nuclei obscured by a brownish material, which is, however, albuminous in character, clearing up under acetic acid. Others are crowded with fatty globules of various sizes, others are so broken down that they are represented only by molecular *debris*. In transverse sections of the tubules these changes may be particularly well seen. The Malpighian bodies present no abnormalities, excepting that they are sometimes congested, and sometimes the seat of extravasation."

We have by no means exhausted the points of interest in this work. Although differing on some points from the author, we can recommend his work as an excellent treatise, deserving the attentive study of every physician who desires to be acquainted with the latest views on this interesting and important class of diseases. The illustrations are very good, and the work is altogether highly creditable to its author.

In the able paper by Dr. George Johnson, of which the title is quoted at the head of this notice, and to which we have already alluded, the author draws attention to the fact already noticed by him as well as by other observers, that in Bright's disease the walls of the small renal arteries are found to be remarkably thickened. This thickening he believes to be caused by a real hypertrophy of their

muscular coats, and he has found it not only in the renal, but in other arteries, for instance, in the pia mater, in the intestine, and in the small subcutaneous arteries of the back of the hand.

The following quotation expresses his view of the way in which the hypertrophy is brought about:—

" Having recently been engaged in making a careful revision of the morbid anatomy and pathology of Bright's disease in its various forms and stages, I believe that I am now in a position to give the true physiological explanation of the hypertrophy of the muscular walls of the small renal arteries, which is so constant a phenomenon in the advanced stages of all the forms of chronic Bright's kidneys. My explanation is this :—In proportion to the destruction of the renal gland-cells, and the consequent diminution of the secretory power of the kidney, there is less demand for blood to be acted upon by the gland ; the small arteries consequently contract upon their contents so as to maintain the balance between the blood supply and the diminished secretory action of the kidney. This continued over-action of the small arteries in antagonism to the heart results in hypertrophy of their muscular walls. I believe that all the facts will be found to harmonize with this theory.

" That the thickening of the walls of the small renal arteries in these cases of chronic Bright's disease is a genuine instance of hypertrophy of muscular tissue is indisputable. The two layers of fibres—an inner longitudinal, and an outer circular—retain all their characteristic appearances, and are simply increased in thickness, while the arteries, being elongated as well as thickened, often become more or less tortuous. It is equally indisputable that hypertrophy of muscular tissue implies long-continued over-action of the tissue in question. Over-action of the muscular walls of the small arteries, of necessity, diminishes the supply of blood. And it seems probable that the diminished blood supply is the result of a beneficent compensatory action. For since a kidney whose secreting structure is partially spoiled by disease is incapable of acting upon the same amount of blood as a healthy gland, it is likely that an undiminished supply of blood to a diseased kidney would tend to embarrass the organ, through engorgement of its capillary vessels, while more or less of the blood would pass through the kidney without being freed from those peculiar constituents which it is the function of the gland to secrete."

It is an obvious objection to Dr. Johnson's theory that, if the hypertrophy of the arterial walls tends to diminish the supply of blood to the organ, it completely fails in its object according to Dr. Johnson's own showing, for the granular kidney retains, he informs us,[a] its vascularity even when the disease has reached a very

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[a] P. 58.

advanced stage.    This he urges as an objection to the theory that there is a morbid increase of the fibrous stroma of the kidney, while in reality the fact tells with equal force against his own view.

The small arteries are no doubt under the control of the nervous system, and by their power of altering their calibre they certainly control the supply of blood to the different organs.    Dr. Johnson believes that, when from any cause a portion of the secreting structure of the kidney is rendered unfit to discharge its function, a stimulus is conveyed to the small arteries through the nerves from the capillaries, and that in obedience to this stimulus they contract and so diminish the amount of blood furnished to the gland.

It is by this lessening of the calibre of the small arteries, and by the consequent increased resistance presented to the efforts of the heart, that Dr. Johnson explains the hypertrophy of the left ventricle, which is so frequently found in chronic cases of Bright's disease.    The connexion of hypertrophy of the heart with disease of the kidney was noticed by Bright himself, who suggested that its explanation might be found in the altered quality of the blood, either injuriously stimulating the heart itself, or bringing about such embarrassment of the capillary circulation as to render more forcible cardiac action necessary for the carrying on of the circulation.    The opinion of Traube has, however, been gaining ground, according to which there is increased tension of the arterial system depending, partly on the diminished flow of blood from the arteries into the veins, partly on the diminished separation of fluid from the blood, both of them being caused by the contraction of the renal tissue.    Both Bright and Traube, it will be observed, regard the capillary circulation as directly affected.    Dr. Johnson regards it as only indirectly interfered with.

As a question of pathological probability, we would be inclined to regard it as highly unlikely that a stimulus of the kind referred to by Dr. Johnson should be followed by hypertrophy.    Analogy would rather lead us to expect a continuous over-action of the vessels, to be followed by atrophy and degeneration; but a question of this nature is not to be argued on grounds of probability.    The great point to be ascertained is, whether the arteries are really hypertrophied or not. Dr. Beale[a] denies that the thickening of their walls is hypertrophic. What does occur, he says, is a degeneration of the muscular fibre cells into a fibrous tissue, which is utterly devoid of contractile

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[a] Loc. cit., p. 71.

power, and a considerable thickening of the connective tissue external
to the muscular coat.    Accordingly, he refuses the name of hyper-
trophy to this change altogether, the increase of substance not being
caused by an increase or development of the natural elements of
the part, but being the result of the formation of an abnormal tissue,
incapable of performing the healthy functions of the original
structure.

It is evident that further investigations are required to elucidate
this important subject.

1. *The Anatomical Memoirs of the late* JOHN GOODSIR, F.R..S;
   late Professor of Anatomy in the University of Edinburgh.
   Edited by W. TURNER, M.B.; with a Biographical Memoir,
   by HENRY LONSDALE, M.D.   Edinburgh: A. and C. Black.
   1868.  2 Vols.  Pp. 999.

2. *Man's Origin and Destiny, Sketched from the Platform of the
   Sciences.*    By  J.  P.  LESLEY,  Member  of  the  National
   Academy  of  the  United  States.    London:  Trübner  and  Co.
   1868.   Pp. 382.

3. *Contributions to the History of Development in Animals.*   I.—*On
   the Fœtal Circulation.*   By WILLIAM MACDONALD, M.D.,
   F.R.S.E.; Professor of Natural History, &c., in St. Andrews.
   Edinburgh: Maclachlan and Stewart.  1868.   Pp. 44.

IF the progress of any branch of science may be estimated by the
amount of the additions to its literature, we cannot but say that
Biology is advancing rapidly, as every year adds very largely to
the number of works on this series of sciences.  Journals, Archives,
Manuals. Essays on all departments of Anatomy, Zoology, and
Botany, have been pouring from the press, within the last few
years, in such numbers as to render the judicious selection of
suitable works, on special subjects, a matter of some difficulty, so
embarrassed are we by the riches of scientific literature.   Of the
recent contributions to our knowledge, some few are of extreme
value, others are equally indifferent.   One or two, however, stand
prominently in relief against the background of the general dull
mediocrity; and of these, the book whose title heads our list is
pre-eminently the most valuable—a book whose name alone would

serve, as a sufficient guarantee, for its admission into the library of any scientific man.

John Goodsir's name is well known to all who take an interest in Biology, as that of a skilled Anatomist, an accomplished Physiologist, a sound Zoologist, and an earnest thinker and worker; and, far more valuable than any memoir, as an evidence of his ability as a scientific teacher, he has left behind him a numerous race of thorough men of science, who owe their first and most valuable lessons in the department of Morphology to him, and who, profiting by his instructions, have done much to perpetuate the leading features of the doctrines taught by this great master.

The life of Goodsir is a story well told, and the biography, by Dr. Lonsdale, contains many interesting sketches of the distinguished galaxy of contemporary scientific men in Edinburgh, as well as of the history of recent advances in Anatomical and Biological science. We trace, with interest, the close friendship of the brother naturalists, Goodsir and Forbes, so diametrically opposite in genius and yet so united in heart. Dr. Lonsdale has done his part of the work in a way which can best be appreciated by a careful perusal of his narrative. The strongly marked lines of character, which stand out so boldly in the life of the great Anatomist, are well brought out. The active, ever restless mind, with aspirations always far ahead of his absolute work—fanciful, yet, withal, sternly practical; with as great a hatred of false science as he possessed a love of true; kindly in feeling, though sometimes failing in expression; bright and perspicuous in thought, though occasionally a little cumbered in diction; the type of a true lover of nature, whose soul and intellect outran the bodily powers in the race of life, and thus caused a sad conclusion to the story, when the overstrained nervous system made shipwreck on the rock of overwork. Goodsir, unlike too many of far inferior calibre and scientific pretensions, lived and died a Christian Philosopher, and in all his researches, in Physical science, he kept before him, invariably, the firm belief in the revelation given by God. All who knew his simple life, his unworldly disposition—capable of penetrating the secrets of nature, while indisposed and averse to the ordinary details of business—cannot fail to recognize and admire the graphic descriptions of the various scenes portrayed by his biographer, and to reverence the memory of one who was, at the same time, an honour to his country, and a giant in his

beloved sciences. The selection of his papers, made by the editors, has been careful—but of Goodsir's writings any fragments are precious, and worthy of preservation; the volumes are well got up, printed in clear, easily read type, and no expense has been spared to make them worthy of the man of whom they are but a small memorial. The title affixed to them only partially expresses their value, for they contain matter interesting to the Physiologist, the Naturalist, and the Physician, as well as to the Anatomist; and everyone interested in Biological studies, practical or theoretical, will be well repaid, for the time spent in the perusal of the work, by the amount and varied character of the information therein contained. The Essays group themselves naturally into several series. The Pathological series, including the description of the diseased Peyerean glands in typhoid fever, of the diseased structure of the liver and kidney in cirrhosis and Bright's disease, the paper on erosion of articular cartilage, on the general nature of absorption and ulceration, on the reproduction of bone, on the histology of tumours, and on the growth of new tissue in injury of the tusks in elephants, although less considerable in number and bulk than others, yet are replete with original observations, and are eminently suggestive to the practitioner.

The Zoological memoirs constitute a most valuable part of the entire collection. In the description of the remarkable aberrant vertebrate animal, the Amphioxus, written in 1841, we have an excellent account of the structure and affinities of the curious creature, to which later investigators have added little, and Goodsir was among the first to point out the relation between this remarkable adult form and the transitory condition of all vertebrates at an early stage of embryonic existence, and to show how the absence of a true heart coincides, both in the former and the latter, with the condition preceding the appearance of the visceral clefts, and thus, in the amphioxus, no sign of these fissures can be detected. The other forms of life, specially described by Goodsir, were chiefly vertebrate molluscan and entozoan; of the former class he has left us a rough outline of the myology of the fore-limb of the elephant, in which he does not mention having found the feeble pronatorteres, which has been described as present in this animal. It is likewise interesting to find that no supinator exists in it, although Professor Haughton found a true long supinator present, though modified, in the Rhinoceros.

Of Fishes, the Orthagoriscus forms the subject of one essay, and

the electrical organs of Torpedo, Gymnotus, Malapterurus and Raia (a favourite subject with him), are considered and described in an elaborate memoir, published first in the *Edinburgh Medical Journal* for 1855. The structure of the peculiar body in the skate, which is the true homologue of the electric battery in the Torpedo, and which was first described by Stark of Edinburgh (*Proc. Roy. Soc. Edin.*, 1844), and by Robin (*Annales des Sciences Naturelles*, 1847), is fully referred to, and a very succinct account is given of all that had been written on the subject of Animal Electrical Organs up to the period of the publication of the paper. The other Zoological essays on Gymnorhynchus, Tethea, Sipunculidæ, and the papers by H. D. S. Goodsir, on Crustacea and Cystic Entozoa, are very valuable, and full of important facts.

But it is mainly on the morphological and embryological matter contained in these volumes that their value depends. Such papers as the classical essay on the origin and development of the pulp sacs of the human teeth, have been long known to Anatomists, and have been studied by all who wish to become acquainted with the embryogeny of these structures; the papers on joints, and their motions and positions, are by no means as well known as they deserve; and as the researches of Henke, Langer, Meyer, and Weber are beginning to be more closely studied in this country, it is well that these philosophical essays should have a conspicuous place in anatomical literature, lest the labours of our illustrious countryman should be overlooked in the crowd. The speculative lectures on the relation of animal forms to mathematical outlines are of interest as showing Goodsir's leading idea of the æsthetic in nature, but, in an anatomical point of view, are of little practical moment.

The researches on intestinal villi are equally familiar to the histologist and physiologist, and although we know, through the researches of Brettauer and Steinach, Weber and others, many facts about the organization of epithelium, and with regard to the anatomical mechanism of absorption, which had not been fully ascertained when Goodsir wrote, yet most of the actual observations made by him are perfectly reliable, and as accurate as any that have been made in more recent days.

The remaining essays, which make up the great bulk of the volume, consist of two groups. Those dealing with homologies, and those with the position of man in nature. In the first group

of papers we can recognize at a glance that Goodsir believed fully
in the consistency of Teleology with a correct Morphology, that
they were not mutually subversive, as the modern Darwinian
school assert; and he attributed the present inclination to disbelief
in Teleology to a narrowness and want of comprehension in under-
standing nature.   The law of typical forms was fully understood
by him, and is clearly expressed in several parts of his collected
writings; and for the components of the segmented bodies of the
higher animals, he has devised a series of names which should, at
least in part, be adopted into anatomical literature.   The hard
framework of the entire body, in this system of nomenclature, is a
sclerome; the various primal linear segments of the body are
somatomes; the entire body of a segmented creature is an entomo-
some; and the skeleton of each somatome is a sclerotome.   He has
suggested for the sub-division of the muscular, nervous, and
vascular system, the names, myome, myotome, neurome, neuro-
tome, hæmome, hæmatome; but these words are much too closely
allied to myoma, neuroma—and to the surgical mind the second
series will at once, as suggested by Professor Owen, call to mind
the names of articles in an operating case.   These names are
thus objectionable, and the words, myozoon, neurozoon, hæmozoon,
splanchnozoon, elsewhere proposed, seem to us preferable for
ordinary use.   That the muscular system is composed of serial
repetitions is a truth of which he seemed to possess an idea,
although he scarcely developed it except in the form of the notes
at page 451 in Vol. i.   In these notes he lays down the principles,
that the muscular system is segmented—that the myozoon, which
at first is simply segmented transversely, becomes converted during
development into a more complex system of forms.   This system
he arranges thus—1st, a layer on the inner aspect of the hæmal
chamber; 2nd, a layer external to the sclerome; 3rd, limb-muscles,
which are modifications of the first and second series.   The
first he again subdivides into—1st, a layer lining hæmal arches;
2nd, prevertebral; 3rd, such prevertebral muscles as are attached
to the limbs.   The second group he divides into—1st, dorsal; 2nd,
intercostals; 3rd, rectus abdominis; 4th, oblique abdominals; 5th,
the rest of the limb-muscles; 6th, cutaneous muscles.   It will be
obvious that this arrangement is one not consistent with the primal
idea of an entomosome, as the leading feature of the somatomes
of any organism is serial homology, and there is not, in the
classification proposed, any reference to the homotypical relation

subsisting between the somatomes in series; the intercostals and obliques are plainly in corresponding series, as has been remarked by Henle and others, and with a little care the muscles of the trunk are reducible to segments corresponding with those in the typical vertebra. The idea of antithesis, or dorso-ventral symmetry, was not entertained by Goodsir, although in no class of animals can that principle of construction be more easily demonstrated than in his favourite class of fishes, but neither this form of resemblance nor true serial homology are regarded in his provisional classification. Taking the segments of the typical vertebra of Owen as our basis of nomenclature, the body muscles are easily resolvable into the following series:—

1. Inter-neuro-spinous. Interspinales, spinalis dorsi. Rectus capitis posticus major and minor.
2. Inter hæmo-spinous. Rectus abdominis. Sterno-hyoid. Genio-hyoid.
3. Inter neurapophysial, external. Splenii. Serrati.
4. ,, ,, internal. Iliocostalis, longissimus dorsi trachelo mastoid, &c.
5. Inter hæmapophysial, external. External intercostals and oblique, and scalenus anticus and posticus.
6. Inter hemapophysial, internal. Internal intercostals and oblique, scaleni minimus and medius. Anterior belly of omo-hyoid.
7. Basio hæmopophysial. Transversus thoracis posterior, diaphragm, transversalis abdominis. Recti capitis antici, longus colli.
8. Basio-neurapophysial. Rotatores spinæ.
9. Spino hemapophysial. Pyramidalis abdominis. Sterno thyroid. Thyrohyoid cricothyroid.
10. Spino neurapophysial. Multifidus spinæ, semispinales, obliquus superior capitis, complexus.

These type series are better seen in reptiles than in mammalians, and are very liable to variation by fusion and specialization in the atter, and hence their serial nature is often obscured. The vexed question of serial homologies in the muscles of limbs forms the subject of another short essay. With his usual originality, Goodsir framed a system of relations of limb muscles, which differs in many respects from all its predecessors. Taking as his unit, or starting-point, the similarity of the quadriceps extensor and the brachialis anticus, he homologates the front of the arm and

of the thigh, thus following Professor Owen's theory as propounded in *The Nature of Limbs*. This hypothesis he carries to an extreme, and in following it out he suggests that the humeral and femoral trochanters are alternately related to each other—the greater femoral resembling the lesser humeral, and *vice versâ*. This view, proposed by him in 1858, was independently suggested by Huxley in the *Hunterian Lectures* for 1854 (*Medical Times and Gazette*, p. 204, 1864), and has been warmly advocated by Mr. Mivart in his admirable monograph on the Myology of Echidna (*Trans. Linnean Soc.*, Vol. xxv., Part 3). This theory was arrived at by Goodsir in the course of allocating the muscles to their respective places while reasoning on human anatomy alone; Mr. Mivart and Professor Huxley base their view upon comparative anatomy, and upon the osteological characters of the limbs of a few genera. " When the limbs are placed with their flexor surfaces inwards and the pollex and hallux, radius and tibia forward, we find in the humerus two prominences (the two tubera), one on the radial side of the bone, and projecting more or less forwards, the other on its peroneal side, and projecting more or less backwards; in fact, it becomes evident that the radial tuberosity is the homotype of the tibial or smaller trochanter, and, on the other hand, that the ulnar (or lesser) tuberosity is the homotype of the peroneal (or greater) trochanter " (Mivart, *Loc. Cit.* p. 399).

The resemblance in Cholœpus, Bradypus, Galeopithecus, and Pteropus, of the humerus and femur, in accordance with this theory, is certainly close, but the evidence against is at least equal to, if not greater than the evidence in favour of the theory in general; and, in the first place, we must bear in mind that the two limbs, fore and hind, are placed not in corresponding but in reversed positions, as stated by Humphry and Vicq d'Azyr. This can be established—first, from the adult arrangement of limbs in higher vertebrates, where we have the knee and elbow, the wrist and ankle-joints in undoubted opposition in obliquity and action; secondly, we have the condition of the limbs in the early embryo— for all physiologists know that when the extremities first appear they are primarily arranged with their axis parallel to the plane of the chorda dorsalis, and when they leave this original position they assume flexures in opposite directions, and at no time in the embryonic life of a mammalian fetus do the extensor and flexor aspects of the limb alternately correspond. But it has been

suggested by Professor Owen that we may obtain light on the subject by examining the limbs of the Amphibia, in which the reverse actions referred to in higher mammals are not to be positively ascertained; but we claim, on the grounds given above, that the absence of the reversal of flexure in these amphibians should not be taken as conclusive evidence, unless the anatomical structure of the limb bears out the theory in other respects. Now it is necessary to fix some fundamental facts to guide us in determining our homologies, and there are few, indeed, of these that are universally admitted. As fasciæ are fully as constant as any tissues in the body, we have an admirable point of commencement in the relation of the aponeurotic investment of the hip to the most superficial of its muscles; this fascia attached along the curved vertebral edge of the postero-basal bone of the limb (Iliac crest or vertebral edge of scapula), passing back in one case, forwards in the other, according to hypothesis, split to enclose the first limb-muscle. This muscle in both limbs is coarse and fasiculated; in both, is inserted into the outer side of the primal limb, bone, femur or humerus, and in some cases, as in the Armadillo, there is a singular uniformity of insertion in the two. Now muscular actions are determined by their insertions, so we might expect to find that in this respect homotypical muscles resembled each other more closely than in point of origin, but even in this more variable condition the first pair of limb-muscles correspond, both arise from the outer part of the ilium or scapula, and as a rule, far back both are often continuous to the spine (the deltoid through its segment the trapezius, the gluteus maximus, or ectogluteus, by its secral and coccygeal fibres). In action, these muscles likewise agree, so their points of unity are legion.

If this be conceded, a great point is gained. This muscle overlaps constantly the flexors in *both* limbs, and its insertion separates the extensor from the flexor plane. The coracoid bone, the undoubted homotype of the ischium, under cover of the border of this muscle, gives origin to the biceps, and its homotype the tuber ischii exhibits the long head of the biceps cruris in a corresponding place. The more closely we examine the muscles of the flexor group, the clearer do we see their relative affinities (see *Journal of Anatomy and Physiology*, N. S., Vol. i., p. 283). And even in the group of animals on whose structure alone, according to Professor Owen, the foundation of a correct homology can be based, we see the same characters. In the Salamander the biceps

is a coraco-radial muscle, and in the Triton and Proteus a similar arrangement occurs. The triceps in these animals and in reptilia distinctly retains its true extensor character. Those who are interested in following out the study of reptilian myology, will find the recently published essay of Rüdinger—*Die Muskeln der Vorderen Extremitäten der Reptilien und Vogel, &c.*, published at Haarlem, 1868—an extremely valuable assistance in pursuing the examination of these most important creatures.

It will of course be at once apparent, that if we believe it to be demonstrable that the extensor side of the fore-limb coincide with the extensor aspect of the pelvic limb, and that the two extremities are in reverse positions with regard one to the other, as a necessary consequence, parts will fall into their respective places without the necessity of such a change in position as the theory of alternate relationship of tuberosities would necessitate. The meso-gluteus thus becomes, as Goodsir indicated, the representative of the infraspinatus, the ento-gluteus accords with the supraspinatus, the pyrifomis with the protean shoulder muscle, masto-humeralis, trachelo-acromial, levator claviculæ or humeri, the obturator internus with the pectoralis minor (see *Journal of Anat. and Phys.*, Vol. i., p 316), the obturator externus with the subclavius, the scansorius with the subscapulo-humeral, and the tensor vaginæ femoris with the teres major.

This scheme of homologation is one more consistent with comparative anatomy than the theoretical system of Goodsir, that the iliacus represented the deltoid, the gluteus minimus the teres minor, the psoas as levator humeri, the pectineus as clavicular fibres of the deltoid, and the adductor longus as the great pectoral, and obturator internus as subscapularis. And it will be seen that even the adoption of the alternate relation of trochanters and tuberosities does not settle the question of the homologies, even of the most contiguous muscles; for, while Goodsir considers the iliacus as the deltoid, Huxley, upon the same ground, considers it to represent the supraspinatus.

A serious weakness in Goodsir's theory is his attempted homologation of the clavicle and the pubis, as putting the bones in the position suggested by the theory of reversed position, we can see at once that this relationship is fallacious, and by getting rid of it altogether we decidedly simplify our homological studies. Our author does not lay much stress on the distinction between cartilage bones and membrane bones, as he says—" Why certain

bones originate in a fibrous matrix, why others originate in cartilage, which has been previously formed in the same matrix . . . . cannot be legitimately put in opposition to the unity of the fully developed sclerome" (Vol ii., p. 95). We have, however, sufficient reason, from comparative anatomy, to consider the pubis as similar to the coracoid of the monotreme, and of some reptiles. This is the conclusion of Professor Huxley, and we consider it to be one warranted by our observations. What the clavicle really is we cannot readily determine; it certainly seems *not* to be Poupart's ligament, as stated by Huxley, but there is one structure which presents to us some of its characters, especially with regard to its homologous position. It will be remembered that in Meckel's ideal system of relationship, which has been of late adopted by Dr. Burt G. Wilder (*Proc. Boston Soc. of Nat. Hist.*, Vol. i., p. 46), the trachea is represented by the urethra, the mammæ by the testes, the thyroid body by the prostate, and the lungs by the kidneys; now passing on the hemal side of the urethra, we find in man, and most animals, as the hare, armadillo, monkey, &c., a distinct subpubic ligament, holding the same position to the ischium which the clavicle of the ornitho-hynchus bears to the coracoid bone; now this may be the clavicle—this is merely a speculation, but all truth usually is first recognized in a speculative form, and the fact of its being merely hypothetical should not cause us to reject what may prove to be a demonstrable truth.

In other morphological papers, such as the classical essay on the construction of the vertebrate head, and the paper on the relations of the nervous system in annulosa and vertebrata, we have many most important truths elucidated, and though we may not agree in all points with him, yet we cannot help following him part way at least in his reasoning. When discussing the morphology of limbs and especially with reference to the thoracic extremity, he lays special stress upon nervous connexions as indicating somatomic affinities, and thus differs from Professor Owen's view of the upper limb as a diverging appendage from the occipital vertebra. Professor Owen, on the contrary, regards nerves as secondary in importance in settling points of homology. It is certainly a very singular fact, that in man, and most mammalians whose upper limb possesses five digits, there should be five nerve cords from five different vertebral interspaces supplying the extremity, and in such animals as the skate, in which the upper limb possesses a multiplicity of fingers, there should be a multiplicity of nerves, but

whether this is regulated by mere convenience, or by a deeper principle in morphology, we are not in a position to decide at present.

Goodsir's national training shows itself clearly in his lectures on the dignity of man, which are leavened with the strict belief in revelation, and the solid argumentative and logical style which is so characteristic of a large school of Scottish philosophers. The idea of man's origin by development is rejected on the ground of his perfection or completeness in himself; and our author on this ground, as well as upon the ground of his higher nature, the moralité and religiosité of Quatrefages, raises him out of the limits of the animal kingdom into a special place by himself. Species are regarded by him as fixed, each animal possessing a characteristic *psyche*—a form of instinctive consciousness which constitutes the entity of the animal, and which remains unchanged through the varying vicissitudes of corporeal waste and regeneration. These theories and modes of reasoning we can scarcely accept unchallenged, even as the dicta of such a man.

It is a little variety to turn from the solid and philosophic writings of Goodsir on this subject to the light, flippant, self-sufficient lecturer, who has brought out a course of lectures intended to explain everything mundane and supra mundane. These lectures were delivered before the Lowell Institute in Boston, in 1865, and are written in a clever, easily read, but rather loosely arranged form. Mr. Lesley has the happy knack of writing on a subject with the determination of carrying everyone away with him—a style good for a lecturer, but one which always sets a true philosophic thinker on his guard. Nothing is closely reasoned out, and much is left to the logical instinct, he says himself very fitly. Eleven lectures make up the volume. Commencing with a review of science in general, and a very good contrast of ancient and modern sciences in particular, he proceeds to denounce the Mosaic narrative as the source of all our errors in modern science, and says that the Mosaic narrative is of the same type as the Vedic, Scandinavian, or Gnostic cosmogony. " It (Geology) has escaped fully and finally from the subjection to the Creed. Sindbad has made the little red man of the sea, who sat so long on his shoulders, tipsy with new wine, tossed him to the ground, and crushed his wicked old head with a stone. Sindbad is free !" Moses to him is an enthusiast—a dreaming poet—and

creation is a myth, for the world has been thoroughly developed to its present state—Nebulæ into globes, inorganic matter into organic, which changes, Darwinically, from monad to monkey, and from monkey to man; the last being originally low in intellect and savage, but by his own powers developing first a reasoning mind, a system of architecture, of speech, of written language, finally of religion—and all this lasting over countless ages of years; and in this last department, our author believes that religion was first devised by man as a system of worship of the dead, then this combined with a system of worship of nature became converted into a theism, which arrives at perfection in Pantheism. And yet the author calls himself in many places a Christian, and professes to be very jealous for the maintenance of pure and undefiled orthodox religion!! Our author's ingenious efforts to super-annuate Moses would sometimes be amusing if they were not blasphemous, and his philology is most astonishing in its dealings with language, which proves remarkably flexible in his hands. His ideas of the exaltation of his own species may be judged from such passages as the following:—"Language is no criterion, for every animal has a language of its own. The sense of the ridiculous is possessed by brutes who laugh with their eyes or tail if not with their whole face, as man does. The faculty of worship *in itself* is no distinction, for the devotion of a dog to his master, of a lover to his mistress, of a Christian to his Saviour, of an angel to his God, has the same essential root as far as we can see." But enough of this; it is a pleasure to turn back to Goodsir, after wasting time in perusing this mass of science, falsely so called, in which truth and hypothesis are blended with an ingenuity of intellect which renders it hard to separate the good from the bad. It is a great pity that the *cacoethes scribendi* in some men is so over mastering that they bring into being books for which they are compelled to apologize Fortunately some little sense of restraint seems to be left in the mind of the author, for "the twelfth lecture was never written out, and is committed for the present to the imagination of the reader, with the suggestion that it would better justify one portion of the title chosen for the book than anything absolutely between its covers." Our American friends are in many things a-head of us, and their go-a-headism is proverbial; but Mr. Lesley has far eclipsed the *New York Herald*, or any other authorized *advanced* American paper. One can have some respect for a man who honestly states his opinions openly, no matter what

these opinions are, but for a man, making a loud-mouthed profession of Christianity, to come forward teaching doctrines of infidelity, culminating plainly in the developmental apotheosis of the human race, and this under the guise of natural science, is inconsistent in the extreme. As far as it goes Mr. Lesley proves several points which he attempts to ridicule; and in his efforts to overthrow the faith of the greatest part of modern Christendom, he has accumulated evidence in favour of the unity of the human race, and in favour of the credibility of those silly Jewish fables in Genesis, for which he has such a dislike, for he has accumulated all the collateral evidence in favour of the Scriptural narrative of the Deluge, the Sacrifice of Isaac, &c.—a conclusion the very opposite to that at which he wished to arrive. The only good part of the book is the portion dealing with Symbolism, and on this department of science many vastly superior works are familiar to all who take an interest in it. The Geological part is very poor, and, as it deals with subjects which have been written upon by many of the most eminent men of the present day, as Lyell, Prestwich, &c., its inferiority in point of detail and conclusiveness can be most clearly discerned by contrast.

The third book on our list is the production of Professor MacDonald of St. Andrews, known as the author of " Some Objections to the currently believed theory of the Fetal Circulation," and these he has embodied in the present brochure. This paper does not profess to be a communication of new facts, but a generalization upon the observations of others. There are many very useful and practical points touched on in the paper, which begins by a rather hurried and confused sketch of development in general, after which the author sketches the general embryonic condition of the heart and blood-vessels. The theory which he propounds is that in fetal life the blood passes through the umbilical arteries, then up the aorta to the arch, thence to the subclavians and carotids; the venous blood from the body is forced then through the ductus venosus to the umbilical vein, and thus is returned to be purified. Dr. MacDonald is not satisfied with the name branchial arches, as applied to the subdivision of the great arterial tree above the heart, and does not seem to value the evidence in favour of this nomenclature drawn from the comparative anatomy of the arterial system in fishes and amphibians; in the former of these classes there are distinct true branchial arches

of arteries, and this condition is reproduced in the immature state of the amphibians, which possesses true branchiæ at first, but which in the course of metamorphosis lose them, and have their arterial system modified so as to resemble, generally speaking, the condition in reptilia. That the human ovum passes down the Fallopian tube by the " force of the pulsation of its vascular system, within the branching villous tufts of the chorion, caused by their alternate protrusion and retraction, giving force and motion as it occurs in the ambulaeral sucking feet of the Asteriæ," p. 19), is a theory scarcely probable, especially when we consider that the Fallopian tube has a muscular coat, and is lined by epithelium, whose cilia move towards the uterine cavity. The author does not seem acquainted with some of the opinions held with regard to the decidua reflexa, as he very properly dissents from the opinion of Hunter, but does not refer to any other views, such as those so well expressed in Dalton's Physiology. He also refers the first motion of the fetus to the beginning of the sixth month, " although the mother may have felt slight flutterings earlier." On this point he differs from most obstetricians, who refer quickening to the fourth month. Taylor refers the greatest number of cases to between the fourteenth and eighteenth week after the last menstruation, and adduces one case in which a lady quickened at two months (*Med. Jurisp.* 6th edit., p. 536).

In summing up the objections to the usually received theory of the fetal circulation, he makes the following statements :—

" 1st. ' That the idea of the blood going through the umbilical vein to the liver is incorrect and unnecessary, the function of the liver being to act on venous blood as a diverticulum for the secretion of bile.' The first part of this is undoubtedly a *petitio principiis*, and the last is an arguing from adult to fetal conditions. When we bear in mind the enormous proportional preponderance of the liver in the fetus, and remember that there is no channel for the passage of bile but into the intestines, and as there is only a comparatively small quantity there in the ninth month fetus, we are driven to the conclusion that the liver has another fetal function beside the secretion of bile—if so, this argument is invalid.

" 2nd. ' There is no single branch sent to the portal vein from the ductus venosus.' How this can be an argument it is very hard to imagine, as according to the theory of Sabatier, as usually taught, the blood passing through the ductus venosus is on its way to the right auricle; this vessel, indeed, is one of very little importance, as in the fetal horse it is absent.

" 3rd. ' The whole anatomy of the heart is erroneous, &c.' Professor MacDonald does not bear in mind that even where there is no septum, as in amphibia, the blood passes from the heart and through the round of the circulation ; and the statement that ' At the early stage of develop-ment, neither the pulmonary artery nor aorta exist connected with the heart till towards the close of pregnancy, during the last month per-mitting the current of the blood through them in the usually described course,' is one with which few anatomists will acquiesce.

" It is subversive of all reasonable physiological inference to fancy that blood oxidized in the placenta should be blended with the impure reduced venous blood, brought by the inferior cava, and sent through the cavity of the heart filled with venous blood from the superior cava, without mixing with it, in spite of the contraction of the heart (by what force God only knows), through the foramen ovale in the auricular septum, before it is developed, into the left auricle and ventricle which has no aortic outlet. It is absurd to suppose that the impure reduced venous blood could be sent up by the aortic bulb through the carotid and subclavian arteries, &c. Such a view is physiologically absurd " (p. 38.)

Thus far, Professor MacDonald supports his theory upon one main argument, that the old theory is, in his opinion, absurd, and that as the heart is not fully developed in early embryonic life, no circulation can go on in an imperfectly developed heart. To this we reply—1st, that in reptiles and amphibia the condition de-scribed as physiologically absurd has its parallel as in these, purified and impure blood mix; 2ndly, that in the same classes of animals the ventricular heart to some extent resembles, in arrangement, the corresponding part of the fetal heart before the septum is developed; 3rdly, that Professor MacDonald, when he throws the *onus probandi* upon the upholders of the older theory, is evidently unacquainted with the writings of one of his most talented fellow-countrymen, Professor John Reid, of Edinburgh, to whose experiments in support of the received idea of the fetal circulation, we would beg to refer him, as given at p. 337 of his " Physiological Researches," published by Sutherland and Knox in 1848.

In conclusion, we would remind Professor MacDonald that, although we believe much is yet to be done in the unfolding of the mysteries of embryonic circulation, yet it is not by reviling theories as " entirely erroneous," " old established or obstinate prejudices," " crude," or " absurd," that truth is to be found—nor it is not by propounding theories unsupported (as he confesses

himself) by a single observation (p. 41) contrary to one which, maugre his own statement, has been, if not absolutely demonstrated in parts, at least has been supported by observations (see p. 11, paragraph 2).

In reviewing the works of modern anatomists, one is often struck by the great want of generalization in special departments. Now that comparative anatomy has outgrown the limits of any single practicable manual, a good comprehensive series of separate handbooks, giving details in comparative Osteology, Myology. Splanchnology, &c., not cumbered with theory, but embodying the numerous detached observations which are scattered so broadcast in our scientific journals, is a great desideratum to the student; and if our industrious and indefatigable workers would turn their attention to the collection and publication of a series of such books, they would confer a great boon on the practical science of the present day.

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*Lectures on the Preservation of Health.* By CHARLES A. CAMERON, Ph.D., M.L., L.K. & Q.C.P.I.; Professor of Hygiene in the Royal College of Surgeons; Analyst to the city of Dublin, &c., &c., &c. London: Cassell, Petter, and Galpin. 1868. Pp. 182.

THESE lectures were delivered in the summer of last year in the theatre of the Royal College of Surgeons. They were free to the public, of whom large numbers attended, the fair sex preponderating. We presume that the influx of so large a number of ladies led Dr. Cameron to adopt a style rarely met with in medical works—namely, that adopted by writers in that department of literature termed " light." Dr. Cameron's work is, therefore, suited to the requirements of non-medical persons who are anxious to learn something relative to the laws of health. At the same time, there is much of this work which might be read with profit by the student and practitioner of medicine.

Dr. Cameron's book is divided into twelve parts, which, we believe, are nearly verbatim reports of the lectures delivered in the College. The following are the heads of the lectures:—1. On Political Medicine and Public Health; 2. On Water; 3. On the Atmosphere and Meteorology; 4. On Ventilation; 5. On Exhalations from Manufactories, Workshops, and Chimneys; 6 On

Food and Diet; 7. On Food Adulteration and Diseased Meat; 8. On Digestion and Indigestion; 9. On Ablutions, Clothing, and Exercise; 10. On the Sanitary Condition of Towns and Dwellings; 11. On Contagion and Disinfection; 12. On Vital Statistics and Sanitary Organizations. In the concluding lecture Dr. Cameron makes a forcible appeal on behalf of the poor-law medical officers, and offers several apparently feasible suggestions for the improvement of their condition. The work is illustrated, and its low price—2s. 6d.—is accounted for by the fact that it is published at the expense of the Corporation of Dublin.

A knowledge of sanitary science is now spreading among the public; and if practitioners would not be behind their patients in this matter, we strongly recommend them to read Professor Cameron's Lectures.

## RECENT WORKS ON MATERIA MEDICA AND THERAPEUTICS.

1. *A Manual of Materia Medica and Therapeutics, including the Preparations of the British Pharmacopeia (1867), and many other Approved Medicines.* By J. FORBES ROYLE and FREDERICK W. HEADLAND. 5th Edition. London: John Churchill and Sons. 1868. 8vo, pp. 824.

2. *The Essentials of Materia Medica and Therapeutics.* By ALFRED BARING GARROD. 3rd Edition. London: James Walton. 1868. 8vo, pp. 479.

3. *Pharmacopeia of India. Prepared under the Authority of Her Majesty's Secretary of State for India, in Council.* By EDWARD JOHN WARING, assisted by a Committee appointed for the purpose. India Office, 1868. London: W. H. Allen and Co. 8vo, pp. 502.

OF the three works, the titles of which head those remarks, the first two might perhaps have been passed over with the formal announcement of this re-appearance in respectively their fifth and third editions. The last, however, under any circumstances, as a new-comer, should claim more particular notice, but as the National Pharmacopeia of India, the most important of our dependencies, and as the production of the pen of Dr. Waring, the Pharmacopeia of

India claims more than a passing notice at our hands. The appearance, however, of the last edition of the *British Pharmacopeia*, to our minds, has rendered it obligatory upon us carefully to examine the pages of the first two of these works, and not to content ourselves with accepting their merits as granted, but rather to see whether they have worthily maintained the reputations won for them by former editions. First, then, for Drs. Royle and Headland's work.

The general characters of Dr. Royle's work have been so long before the public, and, indeed, have been so favourably received by them, that it would appear superfluous on the present occasion to enter very particularly into their description. Suffice it to say, that the principal contents of his work are devoted to a consideration of the operations of pharmacy, to pharmaceutical chemistry, and to a description of the several articles of the materia medica derived from the mineral, vegetable, and animal kingdoms, these latter, as they should do, constituting the greater bulk of the work. The subjects comprised in these divisions of the materia medica are discussed with reference to their natural, historical, and therapeutical considerations, and we always felt that the former of these enjoyed a wider pre-eminence in the several relations of Dr. Royle's work, to the injury of the latter. However, when he associated with himself in his labour Dr. Headland, a gentleman who had made the question of therapeutics his especial study, we anticipated some improvements in this department, and although our expectations were disappointed in the last edition of the work, we hoped on, and were reticent; but finding still the same defects in a work otherwise excellent, we conceive that further silence would be unkind to Dr. Royle, and we now venture to submit for his consideration our impressions about the therapeutical value of his fifth edition.

First, referring to his account of cinchona and its alkaloids, we find some five and thirty pages of his work devoted to what we freely acknowledge to be a most interesting and instructive description of the natural history of this most important drug; but, in all fairness, we ask him does he fancy that any amount of condensing power on the part of any author, no matter how terse may be his style, will enable him to do adequate justice to the therapeutic importance of this most important article of our materia medica, in less than half the number of lines than have been devoted in pages to its natural history description. Thirty-five pages of letter-press to the one—sixteen lines to the other! Again the

therapeutic uses of calomel are disposed of in three lines! Five
pages are devoted to the consideration of nux vomica and its
alkaloids; not so many lines to their actions and uses! Their value
in paralysis is mentioned, but no effort is made to distinguish
between the forms of paralysis which will be benefitted or injured
by their administration. The therapeutical history of copaiba is
disposed of in about two lines and a-half; whilst that of opium,
admitted by our authors as perhaps the most important of all our
remedies, is wound up in less than a third of a page. A line and
a-half is considered quite sufficient to dispose of the therapeutic
properties of santonine, and in, we presume, the anxiety to get rid of
an untasteful theme, its uses are confined to the treatment of the
ascaris lumbricoides, ignoring altogether its value in the treatment
of the oxyurides, whilst the chromatic aberrations of vision which so
frequently alarm the patient when under its influences are not even
hinted at. And so on we might take up every article mentioned
in the work, and whilst recognizing the ability with which one
portion of it is written, we would proportionably find ourselves
disappointed in the lamentable shortcomings of the other. We
speak thus frankly, as in our opinion to do otherwise would be to
do an injustice by a work, a little exertion expended upon the
therapeutical department of which would be well bestowed, as, were
it equal to the natural history divisions, the work would then be one
of which our British medical literature might be justly proud.

Dr. Garrod's work has the merit of being the first of our treatises
on materia medica, in which the new chemical notation has been
introduced; not aiming at any exhaustive description of any
department of the science of materia medica, it can boast within of
the merits or demerits of Drs. Royle and Headland's work. Far
inferior in its natural history, it is somewhat better in its
therapeutical, descriptions. Sketchy in its character, more than
exhaustive, this work fills up one of the requirements of our age,
and this last edition certainly does not belie the promise of the
earlier ones. If used as a companion by the student attending
lectures upon the subject, or by the practitioner as a remembrancer
of information acquired by more extensive study of the topics of
which it treats, this work will find its place, and will command a
fair share of professional support. Upon one subject we may be
permitted to congratulate Dr. Garrod, that he has a son capable
of working up the chemical portions of his treatise in so creditable

a manner. From the specimen of his abilities afforded us by the present work, we feel ourselves to be safe in expressing the opinion that he bids fair to keep up the reputation already gained by a worthy sire for the name of Garrod.

The name of Waring has been so very creditably connected with therapeutics by his most valuable manual upon the subject, that when we heard that the production of the Pharmacopeia for India had been entrusted to a committee of which he was to be the chief, we confess to having entertained great expectations as to the merits of the work which would be the result of his supervision, and we are happy to have it in our power to add, that perusal of the production has not disappointed our expectations. Based upon our National Pharmacopeia, it differs from it mainly in not entering fully into the description of chemical processes, which could only be carried out in extensive laboratories. Indeed, in the last edition of the *British Pharmacopeia*, some such principle seems to have actuated the authorities engaged in its compilation. In the instance of many of the chemicals, the process for their manufacture being introduced by some such words as these:—" It may be obtained by the following process." Of course it could not be expected that manufacturers should implicitly carry out the details of any process, no matter how authoritatively it might be recommended, if they could produce an equally good article, at a cheaper rate, by another mode of procedure. All that the interests of the common weal can with justice require of the manufacturer is, that the chemicals with which he supplies the public shall be of standard quality, and that they shall answer the tests for their purity, laid down by competent authority; to go beyond this is but to hamper trade, and to impede progress.

In addition to the articles enumerated in the *British Pharmacopeia*, Dr. Waring has introduced a great number of medicines that enjoy local reputation in India, some of which are of acknowledged value, whilst others have still their claims *sub-judice*. Medicines of this latter class are described under the heading of *non-officinal*, whilst the former, as well as all the medicines contained in the *British Pharmacopeia*, are classed as *officinal*, and for the description of all the natural historical classification has been adopted. Each medicine has its several preparations, following after its description, which is given in a few terse words, together with its physiological effects, therapeutic uses, and doses. In a great number of instances small figures are to be observed, introduced in the description of

some of the drugs in the body of the work, referring to corresponding figures in an appendix attached to it, where information of a fuller character is given, than would be suited to the general character of the pharmacopeia.    A most interesting classified catalogue of Indian medicinal products derived from the organic kingdom is also given us, which is arranged in two columns, that on the left-hand side of the page containing the Indian drugs, whilst in the right-hand column are given us the names of analogous substances in the *British Pharmacopeia*, and for which the medicines of Indian growth may be substituted.    In this index a therapeutic classification has been adopted, and in our opinion it must prove of great value to every medical officer on his first visit to India.    For instance, let him want a substitute for jalap, he refers to his index, where he will be informed that he will find it in the seeds of the Pharbitis nil. For Calumba root he will find the analogue in the root and stems of the Tinocpora cordifolia.    For horse-radish in the Meringa pterygosperma.    For yeast in the juice of the Borassus flabelliformis, and so on, will be found the Indian analogue of many of our most trustworthy European remedies.    In concluding our remarks upon this most valuable and interesting addition to our standard works upon Materia Medica, we have only to state that to the British student it will be found a most interesting, as to the Indian practitioner, it will be a most indispensable work; in its production Dr. Waring has worthily sustained his already high reputation as a therapeutist, and Materia Medica scholar.

*De la Kélotomie Sans Reduction, Nouvelle Méthode Opératoire de la Hernie Etranglée.*    Par le Dr. MARC GIRARD, Laureat et Medaille d'or de l'école de Médecine de Bordeaux, &c., &c.

*On Herniotomy without Reduction, a new Operative Proceeding in Strangulated Hernia.*

IN this work Dr. Girard proposes to modify the ordinary operation for strangulated hernia in all cases by omitting the last step of the operation—namely, the reduction of the protruded intestine into the abdomen.    This proposition will not, we think, be readily accepted in the present day, as most surgeons look upon the reduction of the hernial protrusion as a step in the operation second only in importance to the division of the tissues causing the strangulation; a step to be omitted only from necessity, when the conditions of the hernia are such as to render it either impossible

or manifestly unsafe. However, though we are not prepared to adopt Dr. Girard's proposition, we would recommend his book to any one who wishes to study a carefully selected series of cases of strangulated hernia, presenting great difficulties in their treatment and diagnosis, the facts of which Dr. Girard has analysed with much ability, as it comprises all, or almost all the published cases in which the intestine has been from one cause or another left unreduced in the wound, after the division of the tissues causing strangulation, and many others of equal interest. Dr. Girard's analysis serves this practical purpose, that it puts before the reader the causes which are capable of rendering a hernia unsuitable for reduction, after it has been freed from strangulation, and makes it clear what the treatment in such cases should be.

The introduction of his book contains a statement of the mortality in operations for strangulated hernia, and a valuable table of the statistics which form the basis of his estimate. This table gives as the result of 1,525 cases operated on 794 deaths, or a mortality of 52 per cent. The statement of the mortality attendant on the operation is followed by an examination of its various steps, with a view to determine that which is most influential in the production of the unfavourable result. To facilitate this inquiry he defines the steps to be,

1st. The incision of the hernial envelopes.

2nd. The opening of the hernial sac.

3rd. The division of the tissues causing strangulation.

4th. The reduction of the hernial protrusion.

Dr. Girard next seeks to determine, before the examination of the steps of the operation in detail, whether the high rate of mortality is due to the operation, or to the lesions provoked by the strangulation, independently of the operation. Having found that peritonitis is the most frequent cause of death, he considers whether it is commonly present in cases of strangulation previous to the operation. He decides from his own experience of thirty cases seen at Bordeaux, that the symptoms of peritonitis did not exist in the majority of them at the time of the operation, and he maintains that the peritonitis, occurring after operation, so common in fatal cases, is to be attributed chiefly to the operation. In examining the steps of the operation he dismisses the first from the group of probable causes of peritonitis. He devotes his third chapter to the consideration of the second step. He declares himself absolutely opposed to the operation without the opening of the hernial sac, or,

as it is called, Petit's operation, advancing against it the same objections as were advanced by Hey, while he does not seem to regard the published statistics of its success. It is strange that one who has evidently devoted much time to the study of hernia should dismiss the consideration of this modification of the operation without any consideration, especially strange that one who rests mainly on statistics to prove his own case, should not have examined those of a proceeding which he condemns.

The mortality in cases of Petit's operation has been shown in 153 cases to be 23·1 per cent. Our author publishes the results of 28 cases of hernia operated on without reduction of the intestine, the mortality in which was 25 per cent. The nature of the cases included in these two estimates of mortality differ widely, for the latter cases were amongst the most unfavourable before the operation was undertaken, while it is probable that the former were—at least the great majority of them—cases of a less complicated nature, and as such selected for the particular treatment.

The statistics show, however, that the consideration of an operation which has reduced the mortality from 52 per cent. to 23·1 per cent cannot, as our author considers it, be puerile.

The remaining portion of the first part of the work contains an admirable essay on the dangers and complications which arise in the execution of the ordinary operation. Dr. Girard comes to the conclusion that the opening of the sac and the division of the tissues causing strangulation play but a feeble part in the production of the mortality. The reduction of the intestine he holds to be the chief cause of the mortality, inasmuch as it converts a wound, the necessary result of the operation, which was simple up to the stage of reduction into a penetrating wound of the abdomen. In addition to this cause of peritonitis the reduction frequently gives rise to extravasation of the contents of the intestine into the abdomen, is the cause of the continuation of the symptoms of strangulation, and, the intestine being inflamed when it is reduced, directly excites peritonitis. Such are the chief arguments which he advances against the proceeding of reduction.

The second part of the work is devoted to the history of cases collected from the highest authorities, in which the hernia was abandoned in the wound of necessity. The results of these cases and one performed since the proposal of the author was first known, we have stated above.

With a view to establish the originality of his proposition, Dr.

Girard gives an interesting history of the various propositions of a similar nature made hitherto. Of these that of Olivier, of deferring the reduction until the inflammatory processes should have passed off, in order to avoid the peritonitis caused by the reduction of an inflamed intestine, is the nearest approach to the author's. There is, we think, no doubt that our author is the first to propose the non-reduction as the absolute rule in all cases, but it remains for experience to determine whether it will ever be adopted. The advantages he assigns to the proceeding are the avoidance of the dangers stated above, in addition to the avoidance of a false reduction of the hernia, and of the compression or twisting of it during reduction, or after it is replaced; and he also states that a loop of intestine paralysed by the strangulation, and devoid of vital power, is in a more favourable position (as to pressure from the abdominal tension and the vis-a-tergo) for acting, so as to transmit the intestinal contents through its cavity, unreduced than reduced. In the last instance—namely, the transmission of contents by a paralysed intestine better outside the abdomen than inside it, his argument cannot be of much value, for in the two cases the vis-a-tergo is the same; in the unreduced it will operate with the general pressure of the abdomen to expel the contents through the wound, in the other to entravasate them into the abdomen. Such a case is clearly one in which the operator has no option; if he can determine the condition, he must content himself with division of the strangulation, and leave the intestine outside the abdomen. He also holds that in cases where strangulations occur from the causes present within the sac, such as bands of fibrous tissue formed of old adhesions and other similar causes, the non-reduction of the hernia gives the operator the advantage of being able to detect such accidents, while the usual operation would, in many cases, reduce them with the hernia, and place them out of sight and out of reach in the abdomen.

The points of most practical importance in the remainder of the analysis of the cases of non-reduction which Dr. Girard has put forward are the mode of treatment to be adopted when the reduction is impossible or clearly contra-indicated, and the events which occur in such cases. He has shown that in cases where the hernia is of considerable size a fatal result may follow, although the strangulation is relieved by the injudicious attempts of the operator to facilitate reduction by pressure, by bringing the skin tightly over the tumour, and securing it by points of suture and external

compresses. He shows also that the practice sometimes advocated of securing a gangrenous intestine by suture, and laying it open, so as to create an artificial anus, is generally unnecessary; that it is meddlesome and even dangerous practice. The cases of non-reduction recorded, of which we have stated the results, show the fact that, in most cases, supposing the patient to escape the dangers necessarily entailed by the operation and the circumstances of the hernia, the intestine left to itself gradually recedes into the abdomen and the tumour previously formed by its protrusion disappears entirely or in part, and ceases to require any treatment further than ordinary support.

Dr. Girard concludes his book with directions which are plain and clear for the performance of the operation. These are simply the performance of the steps of the ordinary operation, the reduction being omitted, and the dressing of the wound with simple emollient, or, as we would call them, water dressings, capable of being removed with facility; he, of course, insists on the necessity of abstaining from the use of sutures. He also shows that there is no necessity to retain the intestine by suture, as there is no danger of its sudden retraction into the abdomen.

The last point to be noticed in the book is the fact that but a single case is reported of the operation without reduction being deliberately adopted. In this case the operators were not certain whether the sac was opened or not, and though they had determined beforehand to operate on the new method, they seem to have met a case which would require its adoption under any circumstances.

In concluding our notice of this book we would repeat the recommendation of it which we have given in the first part of this paper. The book is the result of careful study, contains much valuable information clearly stated, and whether the reader agrees with its conclusions or not, he will derive much practical knowledge from the study of the facts recorded, and the author's analysis of them. We are not prepared to adopt the conclusion that the hernial protrusion should never be reduced, or that the steps of the operation should be in all cases those proposed. Our statement of the results of Petit's operation show that statistics do not support any such conclusion, and Dr. Girard does not appear to us to have brought forward sufficient facts, the result of practical experience, to alter our opinion.

*Acupressure an Excellent Method of Arresting Surgical Hemorrhage,
and of Accelerating the Healing of Wounds.* By WILLIAM
PIRRIE and WILLIAM KEITH. London: John Churchill and
Sons. Large 8vo. 1867.

IN our number for May, 1865, we gave a very full review of Sir
James Y. Simpson's elaborate essay upon acupressure; and so
important did we consider the subject, that we illustrated our
remarks with woodcuts explanatory of the several methods suggested
by that distinguished professor for arresting hemorrhage by the
means he so ably and earnestly advocates. The present work,
from the pen of two deservedly eminent surgeons, has been
sent forth into the world with the view of corroborating Sir James
Simpson's statements as to the efficacy of this means of arresting
surgical hemorrhage, by the record of numerous cases occurring in
their surgical practice. That Messrs. Pirrie and Keith have fully
and fairly tested the value of its practical application will not be
questioned by any one who inspects their work; and the honest
expression of approbation coming from the pens of two such
eminent surgeons must carry great weight with it in the minds of
all who reflect at all upon this department of the operative
surgeon's art. We believe that we are safe in stating that no other
novelty in our art has received more hostile criticism, or been sub-
jected to more crucial tests than acupressure; and, in despite of
all, it appears to hold its own with those who have fairly tested
its merits. Those who are most bitter in their opposition are
frequently, upon examination, found never to have practically
tested its merits in any one of their operative procedures. And
yet the agitation upon the subject has resulted in seriously shaking
their confidence in the long-recognized *ne plus ultra* merits of the
ligature; and as a consequence torsion of arteries has been dug up
again from the obscurity in which it lay buried for so many years,
and is once again brought prominently before our notice.

In this city acupressure, except in the hands of a few exceptional
surgeons, has not received as much attention as the testimony
borne in its favour elsewhere would seem to entitle it to. Two
remarkable cases occurring, we believe, respectively in the practice
of Dr. Robert M'Donnell and of Mr. Macnamara, seem in some
measure to have contributed to this result; in each case the
femoral artery had been secured by means of acupressure of the

thigh after amputation; and upon the withdrawal of the acupressure needle when it was deemed prudent so to do, smart arterial hemorrhage followed, which, however, was subsequently controlled in both cases by direct pressure applied to the vessel under Poupart's ligament for some very short time; and both patients made excellent recoveries without further operative interference. Various theories may be advanced to account for the occurrence of the hemorrhage in each of these cases; but the *fact* remains, and we suspect, has operated to the prejudice of acupressure in the minds of our Dublin surgeons, with all that, however, we cannot blind our eyes to the noteworthy fact that the ligature has received a severe shake upon its throne, and whatever be the means yet employed for controlling surgical hemorrhage, we shrewdly suspect that it will never again be the established favourite it once was.

We can confidently recommend Messrs. Pirrie and Keith's work to the notice of all who are anxious to judge for themselves what can be said in favour, or done by means of, acupressure. It is written in evidently a most impartial spirit, is admirably brought out, and is profusely illustrated with woodcuts explanatory of the various methods by which this method of arresting surgical hemorrhage can be applied.

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*Clinical Lectures on Diseases of the Urinary Organs.* By SIR HENRY THOMPSON. London: John Churchill & Sons. Crown 8vo., pp. 180.

THESE lectures, which appeared originally in the *Lancet* in a somewhat condensed form, are now published, as delivered to the class at University College Hospital, at the suggestion (Sir H. Thompson informs us in his preface) of numerous correspondents. We are sincerely glad that the author has been induced to republish them in extenso, as the results of his large experience upon the important subjects treated of, are thus brought within the reach of all who desire to profit by them. Short, clear, and practical, full of the matured experience of an able surgeon, whose life is constantly devoted to the subject, these lectures are calculated to be eminently useful. We strongly recommend their careful perusal to all young surgeons. The book consists of twelve lectures, in which the subjects of *Stricture, Hypertrophy of the Prostate, Retention and Extravasation of Urine, Stone in the Bladder, Lithotrity,*

*Lithotomy, Cystitis, Tumours of the Bladder*, and finally, *Hæmaturia and Renal Calculus*, are all treated of. The importance of an accurate and careful diagnosis, as an essential step to proper treatment, is forcibly insisted upon, the first lecture being occupied almost entirely with the consideration of the best means of forming a rapid as well as an accurate opinion of the extent and nature of diseases of the urinary organs—first, by questions asked; secondly, by examination made by the hand and by instruments; and thirdly, by examination of the secretions. Speaking of the inferences drawn from the state of the urine, the author gives the following caution :—

"Whenever you want a specimen from your patient to examine, do not tell him to send you a bottle of it passed in the usual way, or you will get a mixture of often doubtful value. What you require is the secretion of the kidneys, plus only anything there may be in the bladder; you do not want it complicated with anything which may come from the urethra. Let the man pass two or three tablespoonfuls through the urethra first, so as to sweep out whatever may be there, which may be put into a separate bottle, and then you will get a specimen—at any rate one of which you will know the source. You will have the renal secretion plus anything in the bladder."

In the second and third lectures the subject of stricture is fully discussed. When speaking of the best kind of instrument to be used for dilatation, Sir H. Thompson candidly avows a change of opinion from that expressed formerly by him. In his work on Diseases of the Urinary Organs he had upheld the superior advantages of a metal instrument, contrary to the opinions of experienced surgeons in this city, the late Mr. Hutton, than whom no better catheterist ever existed, always preferring the gum catheter for the treatment of stricture. In the book now before us Sir H. Thompson declares himself convinced, by his extensive experience, that, "beyond all question, the flexible instrument is the best," thus abandoning the teaching of Liston, and agreeing with the most experienced surgeons on this side of the channel. With regard to treatment by rupture the author says :—

"Rupture, however, is too rough a mode, in my opinion, for most cases; and I prefer to carry a fine blade carefully through the fibres of the stricture, and believe it to be the best, and the most enduring in results. But the popular sentiment about a knife cannot be ignored. The British public is not partial to a sharp edge, and is glad of almost any substitute—a feeling one can quite understand. So that it is not

always possible to do the best thing, and we have to select that which is next best. You will then, probably, find the proceeding by rupture a useful one when dilatation has failed."

The lectures upon Hypertrophy of the Prostate and Retention of Urine will repay attentive perusal, as will also the author's advice regarding the operations required for the closing of urinary fistula; but our space compels us to pass on to the important subject of stone, to which three lectures are devoted. The symptoms upon which a safe and accurate diagnosis should be made having been reviewed, the comparative merits of lithotomy and lithotrity are clearly stated :—

" First of all, I will say that all stones, under puberty, with very few exceptions, are to be cut. Under fourteen or fifteen years of age, stones occurring in the male are to be cut, unless they are very small, and can be crushed, say, in one operation ; because lithotrity is not a very easy or successful operation in children, the urethra being small and the bladder very irritable ; whereas, as is well known, lithotomy is a very successful operation in these cases. We do not want a better operation, comparatively speaking, and one may be content to let well alone. Not more than one death in fifteen or sixteen cases occurs from lithotomy in children. I do not think, therefore, we can do better than to cut in these cases, as a rule. If, however, you have in a child of, say three or four years old or upwards, a stone no bigger than an orange-pip, you may very probably succeed in crushing it, under chloroform, in one, or at most two sittings ; and this it is usually advisable to do.

" That leaves us all the cases above puberty. Then I will say, in general terms, that all the cases above puberty are to be crushed, with certain rare exceptions. The first exception is in a case of an oxalate-of-lime calculus, which is, let us say, an inch in diameter. Under an inch in diameter you may crush an oxalate-of-lime calculus. I have crushed four or five in my time. The cases are very rare. Two of them were in this hospital. An oxalate-of-lime stone, from the size of a bean up to an inch in diameter, can usually be crushed ; above that size no instrument can deal with it, and the fragments will be so hard that the operation might be of doubtful value, even if we succeeded in crushing. That, then, is the first exception to the general law that all cases in adults are to be crushed."

Bad stricture will prevent crushing, but hypertrophy of the prostate will offer no objection, according to Sir H. Thompson. With regard to the quantity of fluid which it is desirable to have in the bladder when crushing, the author considers one ounce ample,

and there can be no doubt that the perfection to which the lithotrite has been brought, does away, in a great measure, with the necessity for more fluid to protect the coats of the bladder from being caught, as this accident is nearly impossible with a Weiss's flat-bladed lithotrite.

Practical hints like the following abound in these lectures :—

"Now let me give you a hint about crushing, which is a very useful one. Whenever you have found a stone, or a good-sized fragment, and have crushed it, keep the lithotrite exactly in that place, and although you may have had some trouble in finding it, you will now continue to find it several times running. It reminds me of fishing for perch ; when you have caught one, you may catch, perhaps, twenty or thirty more out of the same hole, if you will but stop there, and not go fishing about among the shallows. It is the same in lithotrity. You will go on seizing and crushing if you contrive to keep the lithotrite precisely in the same place. In fact, there is what may be called a certain favourite 'area' in every bladder in which to operate—a certain spot which is a favourite haunt, so to speak, for fragments of stone."

In the ninth lecture the author goes *con amore* into a sketch of the history of lithotomy, then clearly describes the " lateral," " median," and " medio-bilateral ;" the two latter he states he has performed about thirty times, and so far does not see much to choose between them and the old " lateral." There is no doubt, however, that the author prefers the lateral to any form of median operation, and rightly, in our opinion, inasmuch as the cases which require lithotomy in the adult are cases of large stones, and the lateral operation affords more room than any other. The concluding lectures are occupied with the subjects of inflammation of the bladder and prostate, the symptoms of hematuria, and, finally, renal calculus. It is unnecessary to say more than that all are treated in an equally clear and practical manner.

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*On Digitalis.* By T. L. BRUNTON, B.Sc., M.B. London : Churchill. 1868.

AT a period when the subject of therapeutics occupies a very prominent position in medical literature, and its deficiencies are daily lamented, while the profession long for definite and exact notions as to the application of remedies, we hail with pleasure the appearance of monographs from which we hope to glean the desired information.

Dr. Brunton now publishes a Thesis read before the Medical Faculty of the Edinburgh University, and dedicated to Dr. Douglas Maclagan, at whose suggestion the investigation was begun.

The author, we are bound to say, has acquitted himself of his task in a most creditable manner, and, though the results of his industry are not complete as yet, his essay is a valuable addition to our stock of knowledge respecting the properties and action of the common Foxglove.

The greater part of the text is taken up with an elaborate inquiry into the physiological action of the drug, incorporating his own independent observations with those of other experimentalists.

Its history from the middle of the sixteenth century, when it was first named Digitalis by Fuchsius, down to the year 1865, is briefly though comprehensively given; and as regards the chemical analysis of the plant, the most noticeable point is, that digitaline, or the neutral active principle, is the most important and active of all the constituents enumerated by chemists, and may be reckoned to be about thirty times as strong as the leaves.

The influence of digitalis on the pulse and heart is especially connected with our views of treatment, and Dr Brunton states that its action, when given in small doses, is to reduce the number of beats without rendering them irregular; but under its further influence the pulse at first remains slow, a quick beat being now and then interpolated, and, finally, the pulse becomes regular and extremely rapid. In this he is confirmed by the recent investigations of Dr. Constantine Paul, who finds that digitalis in small doses generally reduces the frequency of the pulse and probably raises the arterial tension; and in larger doses it increases the number of pulsations and appears to lower the tension.

The conclusion arrived at is, that digitalis exerts a slowing action *directly* on the heart, and thus lessens the number of beats. As to the heart itself, the author is at one with H. Jones, Fuller, Winogradoff, and others, in considering that digitalis, in moderate doses at least, absolutely increases the contractile power of that organ, and renders the impulse abrupt and strong. This point is of extreme value in reference to the therapeutic administration of the drug. Since we may also conclude that it is capable of producing contraction of the capillaries, we can understand the success of its employment in internal hemorrhages, especially hemoptysis and menorrhagia.

Though the diuretic virtues of digitalis are generally admitted,

the question has been hotly debated; and as the author's conclusions, based on a careful collation of facts, appear to possess considerable value, we reproduce them here:

"(1.)—That in anasarca, especially from heart disease, digitalis acts as a diuretic. (2.)—That it sometimes, but not always, acts as such even in health. (3.)—That when it acts upon the intestinal canal so as to cause vomiting and purging, or when it affects the pulse so much as to cause intermittence, and, possibly before this takes place, diuresis is much lessened, though a moderate degree of retardation may coexist with diuresis. (4.)—That in large doses it causes suppression of urine, lasting in the human subject for three days."

According to Dr. Dickinson, digitalis is an energetic oxytoxic, rivalling ergot in that respect; and the author believes with Stadion and Brughmans in its antaphrodisiac powers.

The cause of death from digitalis seems to be stoppage of the heart's action and defective supply of blood to the nerve centres.

A short summary of the therapeutic use of digitalis concludes with the warning that, in cases of fatty heart, great caution is necessary in administering it.

A laborious series of investigations on the urine while under the influence of digitalis is appended, but no general conclusions are drawn.

This is followed by an interesting case of poisoning by infusion of digitalis, and the essay, which we commend to our readers, closes with an account of some physiological experiments on the influence of digitalis on the pressure of blood in the arteries, followed by *facsimiles* of sphygmographic tracings of his own pulse during the time in which he made his observations on the state of the urine.

But though sphygmography is probably destined to play no unimportant part in the investigations of therapeutics, as an art it is still in its infancy, and all observations especially, unless made with the instrument as recently improved, must be accepted with some reserve.

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*A Dictionary of Materia Medica and Therapeutics.* By Adolphe Wahltuch, M.D. London: Churchill. 1868.

Under the above title Dr. Wahltuch presents the profession with a large octavo volume of 482 pages, excellently printed and well got up in Mr. Churchill's best style. We are sorry that the

contents of the book are not so valuable as the exterior of it would lead us to expect.

In the introduction the author tells us that " the purpose of this work is to give a tabular arrangement of all drugs specified in the British Pharmacopeia of 1867." Every table is divided into six parts:—1. The Name and Synonyms. 2. Character and Properties or Composition. 3. Physiological Effects and Therapeutics. 4. Forms and Doses. 5. Preparations. 6. Prescriptions.

From this plan and from the title we might suppose that a rich mine of information awaited our exploration, and, indeed, the author himself evidently holds such an opinion, for he informs his readers that the book, though " simply one of reference, contains plenty of information upon materia medica and therapeutics for those whose time is valuable and whose memory is overburdened," and that it " contains everything with regard to those drugs mentioned in the British Pharmacopeia of 1867," and " is complete in itself."

Now, on opening the volume, what do we find? Nothing but an alphabetical list of the drugs in the Pharmacopeia from Acaciæ Gummi to Zingiber, their character and properties being, as a rule, merely abridged from the Pharmacopeia, the list of preparations from the same source, an inaccurate and ill-arranged account of their uses, and a heterogenous collection of 1,072 prescriptions selected from the formulas of English, European, and American practitioners, and including 174 of his own.

A bare alphabetical list is misnamed a tabular view. The former serves no purpose save to assist reference, while a carefully constructed *table* should aid the memory by grouping under its different heads naturally allied families, and so bringing to light relationships that would otherwise be hidden.

If the words of the Pharmacopeia were taken out of the text, scarcely anything would remain except the loose therapeutical summary and the prescriptions, of which we give a few samples:—

No. 1 is labelled Auct. incog., and consists of nothing but a solution of gum in water and syrup. We may well remain ignorant of the author of such a formula. Others taken at random from the author's own prescriptions are:—No. 591. A mixture of mucilage of tragacanth with solution of subacetate of lead, to be applied on lint in cases of " combustio"—a time-honoured application. No. 990. ℞ Ung. atropiæ ʒ ss., to apply locally for facial neuralgia. As an officinal preparation, scarcely worthy of separate insertion as a prescription, and no directions are given as to the quantity to be

rubbed in at one time. No. 1029. ℞ Uvæ ℨ ss. "To eat every evening and drink milk." In cases of catarrh (Anon).

A patient might eat a small bunch of raisins without obtaining a prescription for that purpose.

No. 1065. ℞ Zinci sulph. Plumbi acet. āā gr. 30, Aquæ rosæ ℨ i. aquæ destillatæ ℨ ii. An injection for chronic gonorrhea (auct). Why not order acetate of zinc directly, and so avoid this inelegant formula.

The "tables" are followed by an appendix containing a therapeutic arrangement of all the preparations in the book; and as a specimen of its accuracy, it is sufficient to indicate that under the head of antidotes, carbo animalis purificatus is mentioned as a "general antidote" without any explanation; hydragogue is given as synonymous with drastic; and ammoniacum, copaiba, cubeba, and elemi are placed among the emollients or demulcents.

Hufeland's, Gaubius', and Young's tables for regulating doses according to age come next, followed by the tables of weights and measures of the British Pharmacopeia and of those in use in Germany.

The chief useful feature of the work is the list of synonyms of each drug in the Latin, English, French, Italian, German, and Russian languages, which will be of value for reference; but it is a pity that the author should have "expended so many hours" in the compilation of a work which was not needed.

The Dictionary concludes with a copious index of names and synonyms, an index of authors of prescriptions, and an index of diseases and prescriptions.

On the last point we would observe, that the publication of such practice-made-easy indices is of very ambiguous value, even though sanctioned by such authors as Stillé and Waring.

To the judicious practitioner they will be suggestive in a doubtful or obstinate case, and will refresh his memory as to the means at his disposal; but to many men they are apt to be a snare, teaching them to prescribe for the name of a disease rather than for the actual condition of their patient.

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*Annual Report of the Commissioners for Administering the Laws for Relief of the Poor in Ireland.* 1868. Dublin.

THE comprehensive "stock-taking," if we may be allowed the expression, performed annually by the Irish Poor Law authorities, affords a very reliable index to the state of Ireland.

The report under our present consideration affords many points of congratulation, especially in reference to the comparative absence of small-pox, and other epidemic disease. To the operation of the compulsory Vaccination Act of 1863-4, carried out efficiently by the medical officers, may reasonably be attributed the almost entire absence of mortality in Ireland from this loathsome and contagious disease.

The deaths from small-pox registered in Ireland were, in the year 1864, 854; in 1865, 347; in 1866, 187; and in 1867, 20. When we consider that the mortality from small-pox, thirty years ago, has been recorded in the Irish Census Reports as averaging about 6,000 annually, we have reason to be thankful for the improvements effected in this respect. At the same time, it no doubt will require constant vigilance on the part of the several authorities, as well as on that of the medical officers, to keep down the prevalence of the disease, and to abolish, by a stringent enforcement of the law, the abominable practice of small-pox inoculation, to which is attributable three out of five cases in which the disease was known to exist in Ireland on 24th February last; and these three cases arose " from the mischievous agency of one itinerant inoculator." The fact that the other two cases arose by recent importation from England should stimulate the public to demand an extension of those most salutary laws for the medical inspection of all ships' crews, and in many cases passengers, which the Government have shown the desire to carry out, and in which direction they have already achieved much good.

There are many points of excellence, alloyed in part, no doubt, with what much needs amendment, in the system and working of the Poor Law. It is the less needful that we should devote any lengthened notice to the subject, as that has been done in a previous number of the *Dublin Quarterly Journal of Medical Science.*

Recent discussions in England upon the subject of gratuitous medical relief render it necessary for us to notice the subject, however briefly. There is much truth in the statement that the thriving artisan is too often led to rely on the certainty that when sick he can fall back upon the dispensary medical service for skilled attendance at his own home, and all requisite medicine, and this feeling too frequently leads to drinking and other excesses. Indeed this very day we saw one man, a skilled workman in an iron foundry, earning when he chooses thirty-two to thirty-four shillings per week, who acknowledged that his present ailment arose from a drinking

bout; another man, who possessed great skill in statuary, for which the demand apparently exceeds his powers of production, stated that he had been drinking for the last five weeks; a third, a mason, was in constant employ, until laid up a few days since with bronchitis, and the effects of repeated drinking fits. What aggravates these three cases, is the fact that in every instance the men were married, and fathers of families.

It is not necessary to multiply such cases, which were by no means the only ones seen on the same day; or to give still more heart-rending details of others which constantly come under our notice. We would, however, ask our readers do they not think that some restriction should be exercised in the issuing of tickets for medical attendance on men earning from 30s. to £2 or £3 per week? We must agree in the opinion expressed by the English inspector who lately visited Ireland, that it does not seem well that small retailers and publicans, however well intending they may be, should have the issuing of tickets for medical relief.

Compulsory attendance at police courts to afford evidence in cases of lunatics, " without fee or reward," is an extraordinary piece of modern legislation and imposition, upon the already overworked and under-paid dispensary medical officers. The still more recent substitution of unprofessional gentlemen to carry out the duties of Medical Inspectors in Ireland, thereby cutting off that slender chance of promotion for Dispensary medical officers, appears at once unfair to them and unwise, inasmuch as the great benefits acknowledged to have arisen in Ireland from the harmonious and judicious working of medical inspectors and medical poor law executive officers, will be thereby upset, and the system now being adopted in England upon the Irish model after full inquiry will, by this last-named measure, be completely overturned.

In conclusion, we would ask the Legislature to reconsider the point, as not only does justice to the medical profession, but also the best interests of the nation demand, that sufficient inducement be held out to fully competent men to enter and remain in this very important branch of the public service.

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*The Warburg Tincture.* London: Trübner and Co., 60, Pater-noster-row. 1869. Pp. 59.

DR. CHARLES WARBURG claims to have discovered in the year 1834, while residing in Demerara, an almost certain cure for fever.

The title page informs us that the pamphlet just published is a " statement proving by numerous official documents its remarkable curative power in fevers, more especially in those of tropical climates, with evidence showing its great superiority to quinine, both as regards efficacy and economy, and its value as a tonic in debility and convalescence."

Extraordinary powers are claimed for this medicine, viz., that it will " cut short an attack of fever in the course of two days," that it strikes suddenly and effectively at the root of fever in every stage, that it is a certain antidote to and prophylactic of the poison of fever, and its author undertakes, under the penalty of being denounced as a fraudulent impostor, to cure three-fourths of all cases of fever, intermittent or remittent, jungle or marsh fever, or any other disease having the type of intermittence, however long standing, whether weeks, months, or years, in the course of a few days. He even pledges himself, if he does not prove its unquestionable superiority to any other known medicine, to divulge the composition of his remedy to the world without fee or reward.

It cannot be denied that much testimony in its favour is adduced, especially from practitioners in tropical latitudes, and many names of weight figure in evidence of its value, *e.g.*, Sir A. Halliday, Sir James Gibson, and numerous physicians in France and Austria.

Up to the date of the revolution of 1848 the author tells us that his medicine was thoroughly recognized throughout the whole of Austria as a certain and safe antidote to every kind of intermittent and remittent fever.

In England this tincture has been employed successfully by the late Dr. Babington, in Guy's Hospital, who pronounces strongly in its favour, but he used it on the understanding that Dr. Warburg would make known its composition on suitable conditions when its merits were thoroughly acknowledged.

Dr. Southwood Smith reported against it in the year 1851, while various confirmations of its efficacy are contributed by provincial practitioners in different parts of England; and Dr. Maclean, of Netley, thinks that it would be a wise thing, on the part of the authorities, to secure Dr. Warburg's remedy for the service in India at a reasonable price.

Though the author defies the power of chemistry to reveal its composition, the analyses of it which have been made all point to sulphate of quinia as the essential ingredient, which the author neither acknowledges nor denies. In 1848 a commission was

appointed in Vienna to examine it chemically, and the three sections into which the commission divided, each of which separately analysed the tincture, all agree that the tincture is a compound of aloes, camphor, saffron, and sulphate of quinia; and by some of them angelica, zedoary, and rhubarb were indicated, in addition. The proportion of alkaloid is about 1 gr. in ℥ fl i., and the dose is from ℥ i.—℥ iv.

Profuse perspiration seems to have usually followed its administration, a property which the author himself adduces as one of its advantages.

Dr. Warburg expresses great astonishment, and even indignation, that his remedy has remained for years so comparatively unknown, and that the profession, as a body, refuse to sanction it.

But most physicians, we think, will endorse the sentiments of Drs. Babington and Maclean, that so long as it is a secret and patented medicine there will be a strong prejudice among medical men against its use, and no amount of good which it is credited with will overcome the general repugnance to prescribing it. The idea of a proprietary medicine is alien to the genius of a free and liberal profession, which ought to work with common zeal for the common good, and it is always difficult to separate the element of self-interest from the author of a nostrum, whatever his qualifications individually may be.

There seems little reason to dissent from the opinion of Dr. Thomas Percival, uttered seventy years ago:—" No physician or surgeon should dispense a secret nostrum, whether it be his invention or exclusive property. For if it be of real efficacy the concealment of it is inconsistent with beneficence and professional liberality; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice."

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*Etudes sur le Curare.* Par le Dr. Aug. Voisin and M. Henry Liouville, Résum éd'un travail communiqué à l'Institut (Acad. des Sciences). Paris. 1866. Pp. 20.

*An Investigation into the Properties of Curara.*

There is a growing tendency in modern therapeutics towards the employment of active agents, whose physiological effects are more certainly ascertained, and which can be administered in minute and graduated doses, while by the use of subcutaneous injection their rapid introduction into the system is much facilitated.

Since the well known researches of Cl. Bernard and others on this subject have been published, curara, or woorara, has been the object of many experiments and observations, and MM. Voisin and Liouville contribute their quota of information, having regard more particularly to its therapeutic applications.

Though in use among the South American tribes from time immemorial for the purpose of tipping their arrows preparatory to hunting or warfare, and known in Europe from the year 1595, when it was brought over by Sir Walter Raleigh, great uncertainty still hangs over its source and exact composition, and the efforts of travellers and scientific men have as yet failed to reveal its origin. It is generally believed, after Schomburgh, to be derived chiefly from various species of strychnos, and is described as being an inspissated extract from the bark of the root, resembling thickened liquorice juice.

If it be a product of a strychnos, it is of great interest to note how widely different its effects are from those of strychnos nux vomica, a member of the same natural order. The latter brings on sudden, abrupt, tonic convulsions; the former, clonic convulsions and fibrillary tremors. But the essential difference in the action of the two poisons is, that strychnia primarily affects the sensory and secondarily the motor system of nerves, while the effects of curara are precisely the converse of these; moreover, strychnia acts on the central extremities of the nerves, curara on their peripheral terminations.

Yet though oppositely related to each other they are not mutually antidotal.

We have here accordingly an additional illustration of the fact that an extreme difference of properties may co-exist with the closest botanical affinities.

It is extremely interesting, as connected with this subject, to bear in mind the recent investigations of Drs. Cruise, Brown, and Fraser, who have shown that the addition of a molecule of iodide of methyl, or of iodide of ethyl, to the natural alkaloid, entirely modifies, and even inverts their physiological properties. Thus, for example, they have demonstrated that the salts of methyl—and ethyl—strychnium paralyse the peripheral terminations of the motor nerves, and, therefore, possess exactly the same action as curare has. Similar effects follow the administration of methyl-brucium and methyl-the-bamin.

Briefly to sum up the physiological action of curara we may first

signalize shivering and trembling, which are, however, accompanied by a notable elevation of temperature, amounting to 3° or 4°, as measured in the rectum or vagina.  Sometimes, but not always, the external temperature is also augmented, and the face becomes suffused.  The beats of the heart, at first rapid and irregular, gradually flag, and finally cease, till death takes place by asphyxia. The pupils, under a moderate dose, enlarge, it may be, to double their size, and it is curious that when this latter phenomenon occurs, it is followed suddenly by constriction of the pupil, after which there is another alternation of mydriasis and myosis.

A more remarkable phenomenon still is often observed from toxic doses, viz., double exophthalmia, which remains manifest for twenty or thirty minutes after all appearance of life has ceased.

All observers agree that curara is a poison to the *motor* nerves, leaving the sensory untouched, while the muscles react vigorously to the stimulus of electricity, showing that the muscular irritability is preserved intact.

As to the channel by which the curara should be introduced into the economy, the authors conclude that subcutaneous injection into the limbs is the most eligible, and that administration by the mouth is inadmissible, on account of the large dose required.

Twelve epileptic patients in the Bicêtre were submitted to the curaric treatment for about a year, but without any definite results being attained.

The dose for hypodermic injection is 18 centigrames (2·77 grs.); endermically 38 centigrammes.

It has been also utilized in the treatment of tetanus and some other spasmodic diseases, and in hydrophobia.

The local effects consequent on injection are a pinkish urticated elevation of the skin, surrounded by a reddish areola, more persistent than the urtication, and accompanied by an instantaneous elevation of temperature and subcutaneous infiltration.  If the solution be not filtered these local effects are more enduring, and an abscess may form.

The ordinary systemic effects of curara are best seen in the circulation, for the pulse gains in strength and frequency, and becomes dicrotous for some hours, the temperature of the axilla is augmented by 1° or 2°, and the number of respirations from 4 to 8 ; the urinary secretion is increased, and it is found to include *sugar*, if examined not sooner than two hours after the reception of the poison.

A severe access of fever is the usual attendant of a large dose of curara; motility rapidly diminishes, or even disappears entirely in the lower extremities; muscular co-ordination is interfered with, and the patients are often utterly unable to move their limbs or to sit up.

To these symptoms are added thirst, severe headache, and an intense desire for sleep.

That the active principle of curara is eliminated in the urine is shown by that secretion, when taken from an animal previously poisoned by curara, possessing identical toxic powers. It can similarly be proved that the viscera generally, *e. g.*, liver, kidneys, spleen, lungs, and heart are imbued with the poison, and hence the application of the "physiological test" to frogs or other animals will assist the medical jurist in deciding on a suspected case of poisoning by this substance. The treatment of poisoning by curara resolves itself into the application of ligatures between the heart and the poisoned region, aided by copious diluent drinks, free evacuations, and, if necessary, artificial respiration, or even tracheotomy may be resorted to, in the event of asphyxia being threatened. Quite recently iodide of sodium has been proposed as an antidote, though it is not easy to see on what grounds.

According to Dr. Preyer, curara owes its activity to *curarine*, a body of intensely poisonous energy, which gives some colour reactions similar to those of strychnia, but is at once distinguished from that alkaloid by striking a blue colour with pure sulphuric acid.

1. *On Varicose Diseases of the Lower Extremities and its Allied Disorders: Skin Discoloration, Induration, and Ulcer: being the Lettsomian Lectures Delivered before the Medical Society of London in 1867.* By JOHN GAY, F.R.C.S. London: John Churchill & Sons. 1868. Pp. 171.

2. *A Manual of the Pathology and Treatment of Ulcers and Cutaneous Diseases of the Lower Limbs.* By JOHN KENT SPENDER, M.B., London, Surgeon to the Mineral Water Hospital, and to the Eastern Dispensary, Bath. London: John Churchill & Sons. 1868.

THE first of the books which form the subject of this notice is written by an able and painstaking surgeon. It deals almost exhaustively with a class of diseases of much importance, which have perhaps not

received that attention which their oftentimes serious nature demands.

Mr. John Gay has chosen as his subject of the Lettsomian Lectures for 1867, Varicose Disease of the Lower Extremities, and its Allied Disorders, and in the three lectures to which he was necessarily confined, gives a very complete account, first, of the Anatomy and Physiology of the Saphenous System; secondly, of the Pathology of the Veins of the Lower Limb; and thirdly, a most valuable and practical lecture on the Etiology and Treatment of Varicose Disease. The book is illustrated by diagrammatic representations of the different matters referred to. They are drawn on stone, from sketches by the author, and are both truthful and telling, though perhaps a little rude. It would be difficult to analyse the contents of these lectures; they are full of the most carefully worked details, and to be fully appreciated must be read through and studied. We may advert, however, to some of the practical conclusions at which Mr. Gay arrives. These seem to us of much importance, and differ materially in many respects from the received ideas. The author denies that there is any connexion as of cause and effect between the varicose condition of a limb and the so-called varicose ulcer; and after reviewing the numerous alleged cures that have been from time to time proposed for the relief of these conditions, he deems them alike faulty in theory and disappointing in practice. To quote the writer's own words. He remarks on page 147 :—

" All these modes of dealing with varicose veins are designed to effect the cure of the disease either, 1st, through the obliteration of the veins themselves or of their trunks,—evidently under the misconception that the *disease* is limited to the vessel or vessels selected for operation, or at all events to these and any varicose branches which may spring from or are connected with them; or, 2nd, by diverting the blood from its new and diseased courses into its former hypothetically normal channels. The *principle* involved in both is *cure* by *obstruction*. Now, if what has been advanced has any foundation in truth, the principle must be faulty, inasmuch as it involves the anomalous proposition to cure obstruction by adding thereto fresh obstruction,—a proposition upon a par with the notion of damming a stream in order to relieve the overflow of its tributaries; and Nature has persisted in thwarting a procedure based on such contradictory premises.

" If, then, varicosity is not to be cured, or perhaps even indirectly relieved, by obliterating or otherwise obstructing the diseased vessels or

their trunks, what are we to do? What principles of treatment are we to adopt? I answer, 1st, that so long as varicose veins are capable of aiding in circulating the blood, though with comparatively trifling efficiency. we must (a) relieve the general circulation of the limb as far as possible from those causes of embarrassment in which their disease originated; (b) preserve the vessels in that state of usefulness to which they may have been reduced, or render them still more useful by giving artificial support to their deteriorated walls; (c) remedy any contingent disorder of the vein as far as it can be remedied; and (d) adopt such general measures as shall have the effect of indirectly imparting strength to its tissues. And 2nd, (a) in the event of any portion of such vein becoming so hopelessly deteriorated that it can no longer aid in furthering the circulation, especially if it be irremediably painful on, or without exercising the limb; or (b) if the vein shall have given way, or appears, from attenuation or other conditions, liable to burst without forewarning; —under either of these circumstances the particular segment or entire branch must be obliterated."

Very much valuable information is to be gleaned in the pages of this monograph; and the chapter on ulcers, which terminates the volume, is especially interesting. We can cordially commend this book to our readers, as worthy in every way of their careful attention and perusal.

Mr. Gay has thrown much new light, both theoretically and practically, on an otherwise somewhat uninviting subject; and although some of his conclusions may not be at once accepted, the scientific and candid manner in which the author has treated of varicose disease of the lower limb cannot fail to command respect and admiration.

The book which is second on the list for review is a monograph on ulcers and cutaneous diseases of the lower limbs. In respect of pathology the author simply divides ulcers into four varieties—the varicose, the syphilitic, the scrofulous, and the traumatic, the first being by far the most frequent. In contradistinction to the views of Mr. Gay, this author considers that there is no fact more susceptible of proof than the dependence of ulcers upon varicose veins, and that they are the remote cause of almost every form of non-traumatic ulcer in the lower extremities. Any classification of ulcers which does not take into account the presence or absence of varicose veins is, Mr. Spender states, "philosophically defective, and therefore practically wrong." After giving a good description

of the appearances of the syphilitic ulcer, and a short notice of scrofulous and traumatic ulcers, the author proceeds to lay down the principles and practice which should guide the treatment of these affections.   His method consists in the promotion of scabbing by the application of chalk ointment, conjoined with powerful and well-adjusted compression of the whole limb.   To this is superadded constitutional treatment, when such appears necessary.   Very detailed instructions are given as to how a bandage should be applied, an accomplishment the importance of which, the author appears to imply, is not sufficiently appreciated.   The writer objects, and very properly we think, to the indiscriminate use of poultices.   He also advises the non-interference with the dressings oftener than may be absolutely necessary, and considers that to wash or irrigate an ulcer, under the pretence of cleansing it, is, perhaps, to undo in one minute the restorative work of the previous forty-eight hours.   Contrary to the experience of most surgeons, Mr. Spender is of opinion that in treating cases of ordinary ulcer of the leg, proceeding from any cause, there is no necessity for any rest of the limb at all.   " Accurately carry out the method of treatment I have described," he continues to say, chalk ointment, namely, uniform forcible compression of the limb by bandages, " and it will be perfectly safe to tell the patient to go and do pretty much what he likes, of course to be moderate in physical exercise, as he ought to be moderate in everything else."   If fact he considers that the exercise of an ulcerated limb is an actual help to its cure.   Mr. Spender finds no favour for Syme's recommendation to blister the edges of a callous ulcer.   We have often, with decided advantage, tried this plan, and have certainly never been so unfortunate as was Mr. Spender, who in this way succeeded in changing small ulcers into large ones, and in finding himself worse off than before.   The book terminates with a sketch of diseases of the skin, as they affect the lower limb, with a view towards the improvement of their therapeutics.   We are not sure that Mr. Spender has elicited anything very new in this respect.   The author submits his monograph to the candid judgment of his profession, as the result of an experience of sixteen years, during which time he has collected a large number of facts bearing on the subject. The question is one, doubtless, of much interest, and deserving of every attention. But the book Mr. Spender has written, although containing some points of practical importance, which will repay perusal, presents nothing original, and is, on the whole, both disappointing and imperfect.                                                o 2

*Recherches sur la Vitesse du sang dans les Artéres du Cheval, au
    Moyen d'un Nouvel Hémadromographe*   Par M. L. LORTET,
    Docteur en Médicine, &c.   Paris: Baillière et Fils.

*Researches upon the Rate of the Circulation of the Blood in the
    Arteries of the Horse by Means of a New Hemadromograph.*   By
    M. L. LORTET.

THE impetus lately given to the graphic mode of demonstrating
the motions of the circulation, has produced numerous papers of
value, founded upon the results of experiments conducted by that
method.  The paper before us is second to none of its class.
Unfortunately we cannot do justice to this interesting monograph
without reproducing many of the numerous and elaborate diagrams
by which it is illustrated.

The author first briefly refers to the researches of the various
experimenters who preceded him in this field of inquiry; then
describes his new and very ingenious instrument for determining
the rate of the circulation, and the practical points to be attended
to in its use; next proceeds to detail the various experiments which
have led him to draw the following conclusions with which he
concludes this able and interesting paper:—

" 1. At the moment of the greatest energy of ventricular systole the
rapidity with which the blood is propelled in the carotid arteries has long
since attained its greatest rate, and at this time is on the decrease.

" 2. The closure of the sygmoid valves has not ordinarily any
influence upon the rate, sometimes, however, it causes a retrograde
movement.

" 3. The dicrotism of the rate corresponds exactly with the dicrotism
of the pulsations.

" 4. Even at the time when the heart is at rest the blood is always
animated by a continuous motion, and often at a considerable rate.

" 5. The rate is much greater during expiration, less during inspira-
tion.  The influence of the respiratory movement is perceptible, even at
a great distance from the heart.

" 6. Mastication augments considerably the rate of the blood, the
energy and number of the pulsations even in the distant arteries.

" 7. Section of the spinal cord at the occipito-atloid region gives an
extraordinary acceleration to the circulation; the rate becomes very
considerable, the pulsations stronger and more numerous.

" 8. Section of the pneumogastric nerve augments very much the rate of the blood and the pressure in the arteries.

" 9. Introduction of air into the arteries destroys completely the regularity of the circulation.

" 10. When one of the carotids is tied the rate of pulsation in the other carotid is very much increased.

" 11. A narrowing of the aorta diminishes the rate of the blood, and the amplitude of the pulsations.

" 12. Insufficiency of the aortic valves augments the rate in the carotids. It suddenly attains its minimum. The pulsations present the same character."

The foregoing conclusions seem to be fully justified by the author's experiments, which appear to have been conducted with admirable care and accuracy. We regret space does not permit us to refer farther to Dr. Lortet's paper than to recommend our readers to peruse it for themselves.

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1. *Archives of Dentistry.* By Edwin Truman, Dentist in Ordinary to Her Majesty's Household, &c. London: John Churchill and Sons. Pp. 368, 8vo.

2. *Mechanical Treatment of Deformities of the Mouth, Congenital and Accidental.* By Robert Ramsay and John Oakley Coles. London: John Churchill and Sons. Pp. 95, 8vo.

3. *Odontalgia, its Prevention, Causes, and Cure.* By W. Parsons Shaw. Manchester: Palmer and Howe. Pp. 250.

Under the title " Archives of Dentistry," we have presented to us the first volume of a periodical whose mission is " to serve as a medium of communication between the medical and dental professions." The volume consists of four numbers, published at intervals, to be determined by the convenience of the contributors. On the debateable ground between medicine and dentistry points of mutual interest will be discussed; while papers on pure dentistry will hold the prominent place which the title of the journal warrants.

The first issue presents an array of names which guarantee that the work undertaken will be well and faithfully done; among them stand prominently forth those of Professor Owen, Drs. Lionel

Beale, Richardson, Cayley, Messrs. Salter, Bate, and others, and
though last not least, that of the editor Mr. Edwin Truman.

The programme set forth in the address is fully adhered to
throughout the pages before us. Our space will scarcely permit us
to do more than glance at their contents, yet we cannot forbear
recommending to the notice of our readers the first article on " the
importance of dental knowledge to the medical profession," and
subjoining to our recommendation the following extracts:—

" The food and drink of his patient are strictly regulated, but he never
looks to the mass of corruption through which, and over which, and
mixed with which, oftentimes that food passes into an already weakened
stomach. These matters are more in his department than he has been
accustomed to think, and it is in them he may often, if he will, find the
source of many a malady, the clue to the cure of which has eluded his
most searching and careful observation."

Again, a few pages further on, the writer observes:—

" The construction of artificial teeth is now well understood and
practised so largely, that they may be, and ought to be, as commonly
ordered in cases of indigestion, as splints for a broken limb."

Three suggestive articles from the pen of Dr. Richardson, will
repay perusal; while in the essays by Messrs. Truman and Bate,
the dental practitioner will recognize a faithful and unaffected
record of the labours and experiences of two earnest fellow-
workers.

There are, besides, papers of histological interest, some good
reviews, and translations. The work is well brought out, and the
illustrations, though not numerous, are most creditable.

The " Archives of Dentistry " supplies a desideratum in our
periodical literature; we give it welcome, and heartily wish it the
success it deserves.

Few deformities of the human frame give rise to more serious
inconvenience, at some periods of life, even jeopardizing the
existence of the individual, than those of the oral chamber.

From time to time the treatment of such lesions has occupied the
attention of the most distinguished surgeons; and where surgery
has stopped short mechanical ingenuity has come to her aid.

Surgery can do, and has done, much, as the literature of this
subject abundantly testifies; but there are cases, more especially

those arising from disease or accident, where mechanical science becomes an indispensible auxiliary. Since the appearance of Snell's treatise, in the year 1828, we have had no work on the mechanical treatment of defects of the mouth. We therefore hail with pleasure the very interesting *brochure* presented to us by Messrs. Ramsay and Coles. The early chapters are devoted to the history and theory of cleft-palate, and a transcript of Sir William Fergusson's dissection of cleft-palate, as recorded in the Transactions of the Royal Society (1845). The leading features in Messrs. Ramsay and Coles' treatment are the employment of plaster of Paris in taking the impressions, and the combined use of hard and elastic vulcanized india-rubber, in the construction of their obturators. The method they adopt is a modification of that introduced before the Odontological Society of London, by Dr. Norman Kingsley, in the year 1864. The *modus operandi* is minutely detailed, a variety of cases given, the description of which is materially aided by excellent illustrations.

No expense has been spared in the production of a work which must prove most acceptable to the profession, and reflects credit on both the authors and publishers.

Mr. Parsons Shaw has devoted 250 pages of letter-press, interspersed with woodcuts, to the description of toothache, its causes, prevention, and cure. His book is written in a somewhat popular style, more adapted to the general than the professional reader.

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*A Manual of Elementary Chemistry, Theoretical and Practical.* By GEORGE FOWNES, F.R.S., late Professor of Practical Chemistry in University College, London. Tenth Edition, revised and corrected. London: John Churchill and Sons. 1868.

THIS work, long the recognized Manual of Chemistry, appears, as a tenth edition, under the able editorship of Bence Jones and Henry Watts. The chapter on the General Principles of Chemical Philosophy, and the greater part of the organic chemistry, have been re-written, and the whole work revised in accordance with the recent advances in chemical knowledge. It remains the standard text book of chemistry.

*The Practice of Medical Electricity, Showing the most Approved Apparatus ; their Methods of Use, and Rules for the Treatment of Nervous Diseases, more especially Paralysis and Neuralgia.* By G. D. POWELL, M.D., L.R.C.S.I.    Dublin: Fannin and Co., 1869.    Fcap, 8vo, pp. 165.

THIS volume is published by Messrs. Fannin, and contains several well-executed engravings of electrical apparatus.    We understand that the author has for some time been devoting himself to a study of the remedial applications of electricity, a subject, we need hardly say, which requires not only familiarity with the instruments used, but physiological knowledge, and an accurate acquaintance with anatomical details.

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*Holden's Manual of the Dissection of the Human Body.*    Edited by LUTHER HOLDEN, F.R.C.S.; Surgeon to St. Bartholemew's Hospital, and Lecturer on Anatomy at that Hospital; and JOHN LANGTON, F.R.C.S.; Assistant-Surgeon to and Demonstrator of Anatomy and Operative Surgery at St. Bartholemew's Hospital.    Third Edition.    London: John Churchill and Sons, 1868.    8vo, pp. 604.

THE impression of our student-days has since become a conviction, that for most students the use of the large and elaborate works on anatomy, at least in the dissecting-room, is of doubtful utility.    We have too frequently seen them yawning over or mechanically reading the pages of minute description, to believe that any, except a few, made their own of the information contained within the volume.    As the author of this now well-known manual told us in the preface to the first edition, his object was to direct the attention of the student to the prominent facts of anatomy, and to teach him the ground-work of the science ; to trace the connexion, and to point out the relative situation of parts, without perplexing him with minute descriptions.    The suitability of a book for students can seldom be accurately determined except by use ; passages will appear obscure to the uninformed mind, which, to those who have already a know-ledge of the subject, seem perfectly incapable of being misunder-stood.    And Mr. Holden has availed himself of the criticisms of his class, and has re-written such passages as they found difficult of comprehension.    The popularity of the work hitherto is a sufficient

proof of the advantage they have derived from its use. The book is printed on good paper, and in fine, clear type, a matter of no little consequence in the dissecting-room.

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*The Institutes of Medicine.* By MARTYN PAINE, A.M., M.D., LL.D.; Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, &c. Eighth edition, revised. New York: Harper and Brothers. 1867.

THE opinions advocated by Dr. Paine have been for a considerable time before the profession, the first edition of his work on the Institutes of Medicine having been published in 1847.

An enthusiastic solidist, as thorough a vitalist as Stahl, a warm advocate of blood-letting, both in inflammations and in fevers, and a strenuous supporter of the doctrine that remedies do not act by absorption, it is unnecessary to say that Dr. Paine has had to undergo the ordeal of much criticism, and has been engaged in a considerable amount of controversy.

We have no desire to enter the lists with the veteran professor; and, however widely we may differ from his doctrines, we have pleasure in bearing testimony to the great industry, the earnest and candid spirit of inquiry, and the very varied learning which are evidenced in the elaborate work before us.

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*A Manual of the Operations of Surgery, for the Use of Senior Students, House Surgeons, and Junior Practitioners.* Illustrated. By JOSEPH BELL, F.R.C.S., Edin.; Lecturer on Surgery, Assistant Surgeon Clinical Wards, Royal Infirmary; Surgeon to the Eye Infirmary; and late Demonstrator of Anatomy in the University of Edinburgh. Second Edition, revised and enlarged. Edinburgh: Maclachlan & Stewart. London: Robert Hardwicke. 1869.

NOTWITHSTANDING the evidence of "Northern proclivities" in the selection of some of the operations described in this little volume, we consider it an excellent remembrancer for both young and for veteran surgical practitioners. It is not unnatural that a scholar of, and teacher in, the Edinburgh school should describe in a manual of operative surgery procedures which have immortalized that school as well as their inventors.

Unlike many writers south of the Tweed, Mr. Bell, while giving due credit to Scotch surgeons, has not overlooked the literary rights of surgeons of other countries, an observation we are induced to make, feeling that an endeavour is now being attempted to further a system that may be called London Surgical Centralization.

In these days of competitive examinations students are expected to have some acquaintance with surgical authorities, teachers will not, therefore, recommend works to their pupils in which they are suppressed. There is evidence in nearly every page of Mr. Joseph Bell's manual that he, at all events is, to a great extent, free from national prejudice, so evident in many of the surgical works that have issued from the London Press since the development of our national railroads, more particularly in those works devoted to specialties, the authors of which, like true empirics, endeavour to lead the public to suppose that they only are good surgeons!

In conclusion, we cordially recommend this manual to the attention of our readers, few books of the kind being comparable to it for precision, conciseness, and usefulness.

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*Mind and Brain; or, the Correlations of Consciousness and Organization.* By THOMAS LAYCOCK, M.D., F.R.S.E., &c.; Professor of the Practice of Medicine and of Clinical Medicine; and Lecturer on Medical Psychology in the University of Edinburgh.

WE have just learned with much pleasure that a new edition of this work, which we regard as one of the most philosophic of the day, will shortly appear.

# PART III.

# MEDICAL MISCELLANY.

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*Reports, Retrospects, and Scientific Intelligence.*

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## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

### Dr. M'CLINTOCK, President.

*Luxation of the Head of the Femur with Fracture of the Acetabulum.*—MR. J. HAMILTON said, about a month ago, a man seventy-one years of age, was admitted into the Richmond Hospital, with dislocation of the left femur which had occurred about five hours previously. He had been assisting another man in removing some hay, and when in the act of stooping down, a mass of hay, which he calculated weighed about thirteen stone, fell on his back and knocked him down. He was buried under the mass, was got out with difficulty, and suffered a great deal of pain, and was unable to stand on the limb. He was brought to hospital five hours after the occurrence of the accident, and when Mr. Hamilton saw him, he laboured under very well marked symptoms of dislocation of the femur into the ischiatic notch. There was inversion of the limb, but not to the extent which there generally is in dislocation on the dorsum of the ilium, the knee resting against the other knee, the toe inverted and resting on the ball of the other toe. Accurate measurement showed a quarter of an inch of shortening. When he stood up there was observable a great increase of breadth in the pelvis; the trochanter was very obvious, but the head of the bone could not be felt, and appeared buried in the ischiatic notch. Thus there was inversion, well marked shortening of a quarter of an inch, prominence of the trochanter, but inability to feel the head of the bone.

On the next day he (Mr. Hamilton) and his colleagues proceeded to reduce the dislocation in the ordinary way, but failed in reducing the bone. When first the man came into hospital, he tried manipulation, flexing the thigh on the pelvis, extension and inversion, and abduction, but failed. They failed equally in the attempt to reduce the dislocation

by the pullies.   Two days afterwards a second attempt was made, but it
again failed in reducing the bone.   In this second effort at reduction
there took place, what was considered to be a favourable circumstance,
as regarded the future success at reduction, viz. :—that the bone was dis-
lodged from the ischiatic notch, and removed to the dorsum of the ilium,
where the head of the bone could be easily felt.   As the man was old
and somewhat exhausted by these attempts, a week's rest was allowed
before any other effort was made.   At the end of the week they made the
third attempt, but was not more successful than in the two previous ones.
A curious fact was observed when he was moved to his bed, viz., the limb
had assumed a different aspect from that of dislocation, and appeared more
like that of a fracture of the neck of the thigh bone.   The limb was
straight down, rather *everted*, and an inch and a-half shortened.   The
man suffered so much pain, and there was so much tenderness about the
hip, that he thought it wiser not to make further examination at the
time ; the trochanter could be felt much more prominent than before.
The man went on pretty well for ten days, when he got an attack of
congestive bronchitis, which carried him off.

*Post mortem.*—As the body lay on the table, the appearance of the
limb was again that of dislocation on the dorsum of the ilium, the limb
inverted, and the shortening, by careful measurement, two inches ; the
transverse breadth of the affected buttock one inch more than on the
healthy side ; the head of the bone could be distinctly felt on the dorsum
ilii, moved by the giving invertment movement to the limb.   On turning
down the integument there was no sign of extravasated blood, the gluteus
maximus appeared quite healthy, but beneath it there were some patches
of chemosis.   The gluteus medius was seen stretched over the head of
the femur and trochanter, as the bone lay displaced just above the aceta-
bulum.   When the gluteus medius was dissected off, the smooth, white
head of the bone, with a short piece of the round ligament was seen
resting in the usual situation of dislocation on the dorsum ilii, in a super-
ficial saucer-like cavity, smooth and lined with lymph.   At the upper
part of the ischiatic notch, where the bone had rested for the first two
days, there appeared a trifling lymphy exudation.   The causes why the
dislocation could not be reduced were now apparant.   First, the rent in
the capsule was small, and considerable force could not get the head of
the bone through it.   Secondly, the lower edge of the acetabulum was
broken off, so that it allowed the capsule adherent to it to yield before
the head of the bone, which thus, coupled with the small opening in the
capsule, was prevented entering the acetabulum.   Though therefore the
head of the bone was brought over its socket, the conditions of the cap-
sule and edge of the acetabulum afforded invincible obstacles to reduction.
I believe that the head of the bone was actually brought into this position.
and remained so for a time, which would explain the position of the

limb after the last attempt at reduction, the limb straight down, with the foot slightly everted, and the trochanter prominent.

In a practical point of view this case is very important, facts bearing on the obstacles to reduction being rare. Few feelings are more unpleasant than the dissatisfaction the surgeon experiences when baffled in reducing a dislocation, and his gratification is proportionately great when he is able to point out that the pathological conditions of the part were such as would defeat the most skilful and persevering efforts.—*November* 28, 1868.

*Aneurism of the Aorta.*—DR. LYONS said the morbid specimens which he now exhibited were taken from the body of a man who was admitted to the Whitworth Hospital a week ago. He was a labouring man, and had been working at his ordinary avocation up to the day prior to his admission to hospital, when he complained of symptoms referable to his heart—palpitation, and distress in the precordial region ; he had a quick but variable pulse, and on applying the stethoscope a loud systolic bruit was heard propagated up the aorta. With rest and appropriate treatment he appeared to be convalescing, and expressed himself much relieved. He sat up every day, and on the last day of his life he sat by the fire later than any of the other patients, expressed himself very well, and was the last in the ward to go to bed. He appeared to pass a very tranquil night, but awoke suddenly with a cry about six o'clock in the morning, and before any one could go to his bedside he was dead. Mr. Jeffrey Martin, his (Dr. Lyons') clinical clerk, had made a very careful examination of the body.

The pericardium was found enormously distended with blood. The heart and the aorta were very carefully examined to ascertain the cause of death. They found the heart fatty, flabby, and with an unusually large "white spot" very conspicuously marked on it. There were old spots of pericarditis on the surface of the heart. There was a prominent tumefaction in front of the orifice of the aorta, and lying between the aorta and the pulmonary artery, and on the summit of it was a slit-like orifice about the size of a threepenny piece. There was found a dissecting aneurism lying external to the aorta, partly burrowing between it and the pulmonary artery, and making its way down into the body of the right ventricle. It travelled up the aorta to a considerable extent. It was of large dimensions—from two to three inches in diameter—distended with soft clots, fluid blood and laminated coagula lying close to the walls of the sac. On proceeding to slit up the aorta in order to determine the point of communication between that vessel and the aneurism, there was great difficulty in finding it. Before it could be found another aneurism was detected situated higher up on the aorta, probably of longer standing, communicating with the aorta at the

junction of the ascending and transverse portion of the arch. It was plugged with lymph densely coagulated. The orifice of communication was very small, but well defined, and would admit only the barrel of an ordinary-sized quill. After considerable difficulty there was found within half an inch of the aortic orifice an aperture smaller than the one above, and which was the only mode of communication between the aorta and the larger aneurismal sac. It would appear as if by a slow process of burrowing this small circular aperture had travelled through the inner coats of the aorta, and that a sac was ultimately formed by the distension of the outer coat of the vessel.

The sac appeared to have gradually made its way upwards underneath the external coat between the pulmonary artery and the aorta, and it ultimately became of considerable dimensions, being at the period of its rupture about as large as a well-developed orange. It had also burrowed downwards into the ventricle, dissecting a portion of the muscular structure of the heart. A good deal of atheromatous deposit was found to be thrown out at the base of the aneurism.

On inspecting the aorta, its coats were found to be considerably thickened, and the valves were also thickened, but adequate to close the orifice. There was not such an amount of deposit in the valves as would cause the bruit, which was a very remarkable one. Dr. Lyons believed the immediate cause of the bruit would be found to be this, that the aneurism, bulging in every direction, pressed on the aorta, and narrowed the tube so much that it gave rise to the murmur by throwing the blood into vertical vibrations. The symptoms present during life might have led to the opinion that this case was one of ordinary obstructive aortic disease; whereas the obstruction was a secondary effect, caused by the pressure of the aneurism on the parietes of the aorta.—*November* 28, 1868.

*Scirrho-Contracted Colon.*—DR. HAYDEN submitted to the society a very good example of scirrhous contraction of the colon giving rise to obstruction of the bowels, perforation of the small intestine, peritonitis, and death. The history of the case was shortly as follows :—The man was thirty-nine years of age, a labourer by calling, and reputedly healthy and temperate. On the evening of Sunday, October the 18th, about eight o'clock, he was attacked by pain in the abdomen and vomiting. The pain and vomiting continued from Sunday night till the evening of the 22nd, when he was admitted into the Mater Misericordiæ Hospital. He repeatedly had had an alvine evacuation on the morning of Sunday. On the evening of his admission he had an enema administered, and there was another evacuation shortly afterwards. He (Dr. Hayden) saw him for the first time on the morning of Tuesday, the 23rd October. The abdomen was then greatly inflated. There was no

tenderness, except at one point, the upper part of the left lumbar region, and here it was not acute. The man's pulse was weak, and only 60 in a minute; his tongue was dry; he complained of no suffering; sickness of stomach was readily brought on by taking food or drink. There was an interval from the morning until the evening of the 23rd, during which there was no vomiting, but in the evening vomiting returned. On the 25th October the tongue was remarkably dry; the surface was hot; the pulse quick; the abdomen was still more inflated, and across the upper part of the umbilical region there was a well-marked surface-groove showing the line of contact of the inflated stomach and colon.

On the night of the 30th of October he was suddenly attacked with severe abdominal pain of a spasmodic character, which lasted five hours, and on the following morning he (Dr. Hayden) found the abdomen still more distended, and the coils of the small intestines distinctly perceptible through the walls of the abdomen. The heart was displaced upwards to the third left intercostal space by the distended stomach, and here it was felt pulsating near the edge of the sternum; whilst below this level the anterior surface of the chest yielded gastro-tympanitic resonance, and when the patient swallowed fluid, a distinct metallic tinkle. Slight pressure over any part of the abdomen caused vigorous peristaltic contraction, during which the wave-like movement passed slowly over, apparently, the entire length of the small intestine without encountering obstruction, and seeming ultimately to be lost in the posterior and deeper regions of the abdomen. The pulse was 120, the tongue dry, the surface very hot, and stercoraceous vomiting now appeared for the first time; hitherto the vomited matters consisted of the contents of the stomach and small intestine, but now they yielded a fecal odour. On the 9th November the resident pupil reported to him that he had succeeded in passing up the long tube nearly its entire length, and that a large enema then given was retained for some time, and followed by a feculent evacuation containing some scybalous matter.

On the morning of the 11th November the man was suddenly attacked with severe pain extending over the abdomen, and sank about half an hour afterwards. In regard to treatment he would merely say, that everything that could have been suggested was done for the purpose of overcoming the obstruction. Electricity was tried repeatedly; injections were repeatedly administered; and on several occasions it was reported that the long tube was passed up nearly the entire length, and no obstruction encountered, and on several of these occasions fecal matter was evacuated. The strongest purgatives were likewise given with no effect. He had the advantage of the advice of his colleagues, Drs. Cruise and Tyrrell, as to the propriety of intervening surgically, but both were adverse to any operative interference.

On laying open the abdomen there was evidence of incipient peri-

tonitis. The stomach and the small intestines were enormously inflated. The large intestine was also inflated in a great degree up to a point corresponding with the splenic angle of the colon, or rather a couple of inches below, and here the intestine abruptly resumed its normal calibre. At this point the colon was found constricted, and obstructed by a scirrhous mass, which barely left room for the passage of a large probe. The meso-colon in the immediate neighbourhood of the constriction was thickened and puckered, and the lymphatic glands enlarged and hardened. The distance of the stricture from the anus was over twenty inches, measured by the intestine, whilst on examining the so-called long tube which had been used he found it not more than eighteen inches in length. About twenty inches above the cecum caput coli, the ileum had given way at two points, one of which presented an opening as large as the end of the thumb, the other being much smaller, both being surrounded by a deeply congested surface. Through these openings the contents of the small intestine had escaped in great quantity into the peritoneum. The ileo-colic valve had been ulcerated through, the yielding of which, probably, coincided with the first appearance of fecal vomiting, viz., on the 31st October.

The case was interesting diagnostically as presenting an example of scirrho-contracted colon, amounting almost to occlusion, with extensive scirrhous transformation of the neighbouring parts, without the history of chronic obstruction of the bowels, indeed with the history rather of acute obstruction. The man repeatedly assured him (Dr. Hayden), in answer to his inquiries, that he had not been subject to constipation, and was in a satisfactory state of health, and engaged at his daily labour up to the date of the acute attack described. There was, however, no evacuation of blood by the bowels, nor tenesmus at any period of his illness. The aspect of the patient was not suggestive of malignant disease.—*November* 28, 1868.

*Cystic Tumour of the Breast.*—Dr. Robert M'Donnell brought under the notice of the Society a large tumour which he had lately removed from the breast of a lady. The case was also illustrated by a drawing of the tumour before operation, and a second showing the appearances on section atfer removal. The microscopical characters were also shown to the members.

Dr. M'Donnell said that he had been first consulted by the patient from whom he had removed this enormous tumour in October last. The patient and her friends being under the impression that the disease was malignant, and that operation was out of the question, had sought advice, in order to learn what should be done when the integument, which was very thin at some points, gave way.

The following was the history of the case :—

Mrs. S., a widow, who had not borne children, sixty-four years of age, had observed a swelling on the left breast two years ago : for the first year it grew slowly and was free from pain. About a year ago she accidentally got a blow from the elbow of some one in passing ; this caused pain and a rapid increase in the size of the growth.

It was not now painful, but the patient suffered great discomfort from the dragging weight. She supported the tumour on the left arm passed underneath it ; her arm ached from thus bearing the weight of it, although assisted by a sling passed round the neck and shoulder. She could not rest at night on the right side, the weight so oppressed her breathing ; driving in an easy brougham could no longer be borne, as the slightest jolt caused distress. With all this, however, there was no lancinating pain. She traced all her discomfort simply to its weight.

As seen in the accompanying drawing, large veins ramified over the tumour, and the integument was thin and tense. The nipple was so stretched that it was not at once to be discovered ; it was not retracted ; no discharge had ever taken place from it.

On raising the tumour in one's hands, it was found to be singularly movable, considering its bulk, and, thin as the skin was over it, it was not adherent.

There were no enlarged glands to be felt in the axilla or above the clavicle.

The patient's general health was good ; she looked younger than she really was. The lower portion of the tumour was firm to the touch, and evidently composed of solid matter ; the upper portion was as obviously a cyst containing fluid.

On October 9th, this cyst was punctured with a small trocar, and about an ounce of fluid drawn off. This fluid was viscid (thicker than flax seed tea) limpid, alkaline, free from albumen, and contained mucin in large quantity ; this latter was precipitated by acetic acid, and was insoluble in excess of that re-agent. Liquor potassæ had a remarkable power in removing the viscidity, especially when boiled along with the fluid.

Dr. M'Donnell recommended the removal of the tumour. On October 17th, his colleague, Mr. William Colles, saw the patient in consultation with him. They agreed in thinking that the tumour was not malignant, and should be removed. Their opinion was based on the following considerations. The mobility of the tumour, and of the integument over it ; the state of the nipple ; the absence of enlarged glands ; the freedom from pain ; the appearance of the patient ; the fact that a portion of the mass was composed of a cyst, and the nature of the fluid which that cyst was known to contain.

Dr. M'Donnell removed the tumour on October 26th, assisted by Mr. William Colles, Dr. Cruise, and Mr. P. Connolly.

Two circumstances connected with the operation are worthy of notice, as bearing on the pathology of the case—First, after the necessary incisions were made the enormous mass was detached from the integument, and the parts behind with the greatest facility, and almost entirely by the finger of the operator; second, the small number of arteries which fed the tumour, considering its great bulk. Two vessels only needed to be secured, and these were controlled by torsion.

The tumour weighed between nine and ten pounds. The patient made a speedy recovery.

Dr. M'Donnell having exhibited the tumour, pointed out the large single cyst which occupied its superior part, and communicated with the centre of the mass, which was apparently composed of the original structure of the growth broken down and disintegrated. Microscopic examination showed the cells of which the tumour was composed to be spindle-shaped cells; in fact, resembling closely, connective cells, such as are found in the gelatinous connective tissue which binds together the vessels in the funis.

The tumour was a remarkable and exaggerated specimen of the affection known as cystic-sarcoma; its microscopic appearances indicated that, by the microscopist, it would be placed among the class of "spindle-cell-sarcomata," while the contents of the cyst, as well as the glutinous structure diffused among the cells, proved it to belong to the group of growths now known as myxomata; that is to say, the group in which the elements of mucous membrane enter into the formation of the growth, just as fat structure does into fatty tumours, or connective tissue into connective tissue tumours. It belongs, in fact, to the mucous tumour, or myxoma of Virchow.—*December* 5, 1868.

*Fracture of the Spine.*—DR. BENNETT exhibited a specimen of fracture of the third lumbar vertebra, caused by direct violence. The history of the case was as follows :—

The patient, aged forty-five, was admitted into Sir P. Dun's Hospital on September 9th, in the middle of the night. He had been struck while at work in the gas works by a broom handle fixed in a steam engine. The engine was moving along a tramway in a narrow passage, and the broom handle, projecting from its side, struck the man, and fixed him against the side of the passage; it entered the abdominal wall just above the anterior superior spine of the ilium, making an oblique, linear wound about an inch and a half long; the wound was clean cut, without ecchymosis or any sign of bruising. On opening the wound the oblique muscles were found greatly torn, and the fibres of the tranverse muscle were seen untorn in its deepest part. The resident pupil, who saw the patient on his admission, was confident that he saw a portion of the intestine protruding into the wound; it could not be discovered, however, when Dr. Bennett examined the patient.

The course of the wound could be traced by the emphysematous feel of the deep tissues, back to the junction of the floating ribs with the spine. There was no irregularity of the spine, nor any paralytic symptom present. The patient complained of intense pain in the back; his pulse was good; so good that Dr. Bennett concluded that there did not exist any wound of the cavity of the abdomen or of its viscera. The urine was free from blood. Opium was administered freely to relieve the principal symptom—the intense pain. The wound in great part united within the first twenty-four hours, and was re-opened to give exit to discharge. Violent reaction set in as the wound commenced to suppurate, and after seven or eight days the patient became delirious, and passed urine involuntarily; still he could be roused, and could move his limbs. From this condition he rallied in the last week of September; he began to improve, and was able to take some food; he could get up with help, and sit on the close stool, and was moved into an adjoining ward. In October he had repeated rigors, sweated at night, but did not seem to be losing strength. In November he began to sink from hectic and the continued discharge from the wound. He died on November 21st.

On opening the abdomen the peritoneum was found discoloured in the lumbar regions, but free from any trace of wound or of inflammation; the discolouration was due to the presence of collections of matter external to it, in each psoas muscle, and in the position of the wound. The track of the wound was filled with pus, and extended back to the transverse processus of the vertebræ; this cavity did not communicate with the psoas abscess on the right side. The ascending colon was abnormally adherent to the abdominal wall, where it was uncovered by peritoneum; probably this portion of the intestine was exposed in the wound, and was that seen by the resident pupil at the first examination of the patient.

On opening the psoas abscess on the right side shreds of fibrous tissue, portions of an intervertebral disc, were found lying in its cavity, and some small particles of dead bone. A probe could be passed across into the abscess on the left side of the spine, through the body of the third lumbar vertebra. On making a vertical section of the spine, it was found that the anterior portion of the body of the vertebra was detached, and slightly displaced upwards and forwards, so as to overlap the border of the vertebra; above it a line of fracture ran obliquely downwards and backwards through the body, detaching nearly the anterior half of the body; in this line a few detached fragments lay. The posterior division of the body retained its relation to the neural arch, and there was no injury done to the vertebral canal; the faces of the fractured portions of bone were covered with soft lymph. In the spinal canal there was slight abnormal vascularity, and inside the theca there was yellow lymph in small quantity amongst the fibres of the canda equina. The case is

of interest as an instance of fracture of the body of a vertebra from direct violence, and from the fact that the fracture was not attended by any of the usual paralytic symptoms; this absence of symptoms is explained by the fact that the vertebral canal was not involved in the
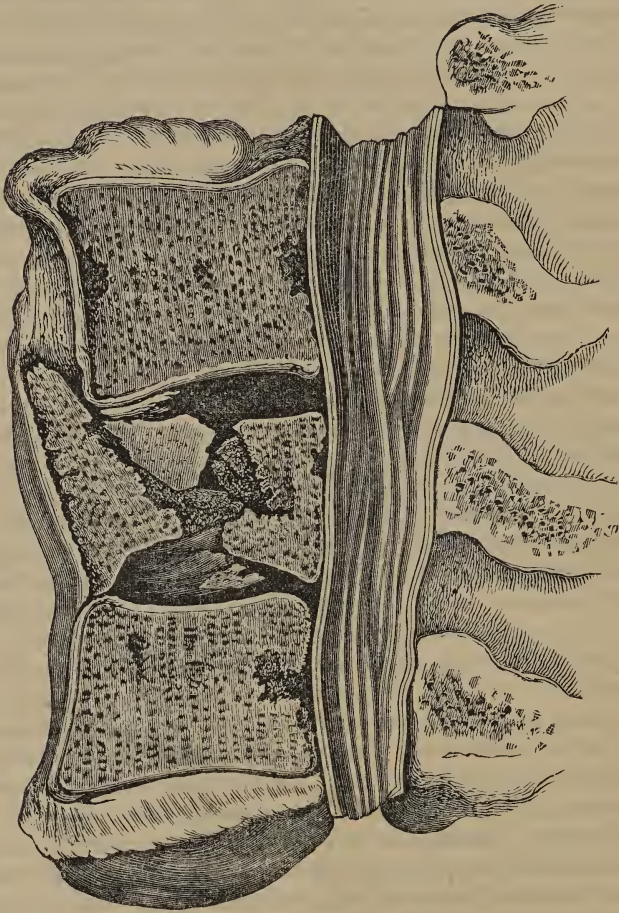
fracture.    Throughout the entire case the only symptom directing attention to the spine, except the course of the wound, was the pain in the back.

The mode of occurrence of the injury is of much interest, for it seems evident that the broom handle must have reached the body of the third lumbar vertebræ, by travelling through the abdominal wall, without opening that cavity or wounding any of its viscera.—*December* 5, 1868.

*Fracture of the Neck of the Femur.*—Mr. Swan exhibited a specimen of fracture of the neck of the femur, removed from the body of a man, aged seventy-nine, who had been admitted into Steevens' Hospital on the 10th of August, 1868, having, a few hours before, fallen backwards, while ascending a flight of stairs, his right hip striking with considerable violence against the balustrade. The limb was found to be shortened three-quarters of an inch; the foot was everted. Crepitus could not be perceived on merely rotating the leg, but was evident on manipulating the seat of injury. The man remained in the hospital until his death, which took place on the 25th of September, from the exhausting effects of diarrhea and sloughing of the nates.

The injury was found to be an extra-capsular impacted fracture, the neck of the bone having been driven into the cancellated tissue between the trochanters. A second fracture had detached the great trochanter, traversing the posterior intratrochanteric space as far as the lesser trochanter.— *December* 5, 1868.

*Chronic Disease of the Larynx ; Pulmonary Phthisis.*—Dr. Lyons said the morbid specimen which he now exhibited, had been taken from the body of a man, aged thirty-seven, who was admitted to the Whitworth Hospital, on the 11th of November. He was suffering very much from dyspnea. There was also a marked laryngeal strider, and he was jaundiced to a considerable degree. His history was that he had been occupied as a labouring man, in a large porter brewery, and that he had drunk very freely of porter for some years previously. About a year before his admission, he began to suffer from hoarseness and a good deal of distress in breathing, referable principally to the throat. His health gradually gave way, and he then sought admission into hospital. On examining the throat there was a great deal of pain felt, on pressure over the os hyoides, and at times the difficulty of breathing was very urgent indeed. It was evident also there was implication of the lung, but the most peculiar and unusual symptom about the case was the presence of jaundice. His eyes were well marked with a deep icteroid tint, and the whole surface of the body also was jaundiced. Appropriate treatment produced some relief, but he got no permanent ease from his principal symptom, and during the last ten days he suffered from extreme difficulty of breathing, especially at night. The moment the dusk of evening set in, his breathing became exceedingly difficult, and this was the main source of his distress, up to the period of his death. On *post mortem* examination, very considerable and old standing disease was found in the larynx, and on slitting it up the arytenoid cartilages were observed to be almost completely destroyed by tubercular deposit, and subsequent very extensive ulceration. There was a small anfractuous chamber occupying the site of the cartilage on either side. There was a good

deal of thickening of the mucous membrane, and the epiglottis, and the lower part of the trachea were greatly engorged; there was also extreme pulmonary engorgement to the utmost ramification of the brochi, with a deal of a viscid mucous of a bloody character. A general engorgement of the whole lung existed with patches of consolidation here and there, and little masses of tubercular deposit throughout the lung texture. It was on examining the apex of the organ, however, that the most extensive evidence of the destruction of parts was to be found. Large cavities existed, communicating with each other, and occupying the whole summit of the lung. They were of old standing; there was a good deal of cartilaginous thickening about them, and the same condition was found, fully exemplified in corresponding situations in both lungs. There was nothing particular about the heart, except patches here and there, showing former inflammation of the pericardium. The large white patch was more obvious than usual; and here and there were signs of old pericardial inflammation, but no adhesions were found. The organ was rather small. The condition of the liver was worthy of note. Such an advanced state of tuberculosis, it might have been expected to find a fatty state of the liver. It presented a well marked example of nutmeg liver, not uniformly throughout, but the greater part of the hepatic structure was affected.— *December* 5, 1868.

*Ovarian Tumour.*—Dr. BENNETT exhibited an ovarian tumour which he had removed two weeks previously from the body of a woman who died in Sir Patrick Dun's Hospital.

The history of the case extended over a year; the patient, aged twenty-four, was delivered of her last child, immediately before Christmas, 1867, and the tumour was then first noticed; it increased rapidly, and its increase was attended with constant pain extending over the entire abdomen. In February the patient was admitted into the Whitworth Hospital, under the care of Professor M'Dowel, by whom the tumour was tapped; she remained in hospital for five weeks, and then returned to her home. Six weeks afterwards she was admitted into Sir Patrick Dun's Hospital, and remained there until her death. The tumour was three times tapped during the spring and summer, and the fluid drawn off was on each occasion sero-purulent.

The case was considered unsuitable for the operation of ovariotomy, as there appeared to be constant inflammatory action present within the tumour and on its peritoneal surface, and as it was evidently adherent in many places to the abdominal wall and viscera.

In September, Dr. Bennett was asked to see the patient by Dr. Kennedy, in whose ward she had been during the summer; he found a superficial abcess forming in the middle line of the abdomen, in the position of the last operation of tapping.

The patient was transferred to the surgical wards for the treatment of this abcess.

In a few days it was evident that a communication was established between the superficial abcess and the tumour, and that the latter was about to open externally. In a day or two more a small opening formed, which gave vent to a profuse discharge of pus; during the two days following sero-purulent matter flowed freely, and the tumour diminished considerably. In the hope that the cyst might be obliterated, pressure by compresses was made upon the abdomen, but it failed to produce any diminution in the tumour further than that which had occurred on the first escape of its contents. After ten days the tumour became tympanitic, owing to the entrance of air through the external opening. A probe could now be passed easily into the tumour towards the pelvis, but not laterally, owing, as the *post mortem* examination showed, to the projection of secondary cysts from the posterior wall into the cavity of that which had suppurated. The discharge, which, previous to the entrance of air into the tumour, was free from odour, now became very offensive; and its quantity was undiminished. In less than a month from the establishment of the external opening, the patient sank, worn out by pain and the continual discharge. On opening the abdomen after death, the cyst was found almost universally adherent to the abdominal wall in front; these adhesions were most dense and firm around the opening into the tumour, and between it and the pubis; the upper part and sides of the tumour were connected by numerous fibrous bands to the omentum, stomach, and liver; posteriorly there were but few adhesions to the intestines; the pedicle of the tumour formed of the broad ligament was long, and there were but slight adhesions between the tumour and the pelvic viscera.

The opposite ovary was also diseased; it was converted into a cystic tumour composed of two chambers, the entire about the size of a small hen egg; the walls of these cysts, though very thin, were coated on their inside by a thin layer of bony matter; the contents were, perfectly clear watery fluid, with a few glistening plates of cholesterine floating through it.

The examination of the larger tumour showed that it was a multilocular cyst, of the second variety described by Hodgkin, the secondary growths being attached to the internal surface of the principal cavity by broad bases; these secondary growths grew from the lower and posterior part of the tumour, and projected into its cavity, so as to prevent a probe introduced in front from passing into the lateral part of the tumour, while they offered no resistance to its passage down to its pelvic portion.

The inner surface of the tumour was covered with a thick layer of greenish lymph, and this coating had to be removed to expose the walls of the secondary growths. These were all of them thin walled cysts, of

sizes varying from that of a pea to that of an apple, filled with a thick transparent slime.

The case was interesting, as an instance of the mode of termination of a case of ovarian disease, by establishment of external fistula, and as showing the variety of structure and contents of such cysts.—*December* 12, 1868.

*Pulmonary Phthisis, with Emphysema.*—DR. STOKES related the following case, and laid the morbid specimens before the meeting :—A man, aged thirty-five, was admitted into the Meath Hospital on the 18th of November last, five months previous to which he had been struck by a heavy weight on the front of the chest. The blow was followed by difficulty of breathing, and shortly afterwards he expectorated a large quantity of blood. He had previously had a cough. On admission he was suffering from dyspnea of an extreme character ; his face was livid, his shoulders drawn up and stooped forward ; the inspirations were exceedingly rapid, and preceded by a kind of intermittent, chucking action of the respiratory muscles. There were loud sibilant râles over the entire chest, and the lower lobe of each lung was distended to the utmost by air. The diaphragm was depressed, and the liver pushed downwards. The sounds of the heart were regular, but feeble, and the impulse was almost imperceptible. He remained in the half-sitting posture in bed ; his pulse was 120 ; he had incessant cough, and purulent expectoration in large quantity. He died on the evening of the 27th. Phthisis was suspected to exist, but no positive diagnosis was made upon this point. The presence of aggravated emphysema was, however, sufficiently manifest.

Upon examination, *post mortem*, the upper portion of the left lung was found closely adherent to the walls of the chest, and in its interior were several cavities containing purulent matter in large quantity. The upper lobe of the right lung was of a dark colour, congested and solid throughout. The lower lobes of both lungs were extensively emphysematous, and contained numerous small tubercles. The right ventricle of the heart contained a large, firm coagulum, which reached into the pulmonary artery. In the left ventricle a similar coagulum of smaller size existed.—*December* 12, 1868.

*Abscess of the Liver.*—DR. LYONS exhibited a specimen of abscess of the liver taken from the body of a woman, aged fifty-six, who was admitted to the Whitworth Hospital in the month of September. Her history was as follows :—Up to four years ago she enjoyed very good health, when she and her husband left this country, and settled in New York. Her husband died there, and she fell into bad circumstances, and determined to return to her native land. She was not attacked with

any peculiar illness during her residence in the United States; and, in point of fact, appears to have been in her usual health until on her return voyage. She approached Queenstown, when she became attacked with symptoms of sickness of the stomach, which lasted some days. She then made her way to Dublin, and sought admission to hospital. At this period of the case the symptoms were the following:—She had a peculiar haggard worn look; the conjunctiva was of a pure pearly white, and all through there was a complete absence of jaundice, or any icteroid tint whatever. She suffered from distress referred to the stomach, but it was of an intermittent character. It was sometimes very severe, and of an oppressive character; and, on the other hand, she would be for days without any pain. Her pulse was at all times very quick, never below 90, occasionally ranging as high as 100 and 120; and a very important feature in the case, and one bearing prominently on the question of diagnosis, was the frequent occurrence of rigors. Rigors would take place for two or three nights in succession. Then there would be an apparent improvement in the general symptoms, and a recurrence of the rigors again, followed in many instances by copious sweating. Having carefully considered all the symptoms of this case he came to the conclusion that the patient was labouring under abscess of the liver. The diagnosis of this disease, it was almost unnecessary to say, was not always easy to be made. There were not any symptoms to point to the liver as the main seat of the disease, but from a consideration of all that was presented in the case, but basing his observations chiefly on the frequent occurrence of rigors, he came to the conclusion that the patient was labouring under abscess of the liver. There ensued a period in which, for a fortnight or three weeks, this woman was able to sit up, and during which she expressed herself as feeling much better. Subsequently to this there was a renewal of the old symptoms, and she suffered from severe rigors and sweats of a very exhausting character. It was evident her strength was giving way. She gradually succumbed, and died after two months' residence in the hospital. The *post mortem* examination was made with great interest, and the diagnosis was fully verified. It was found, on opening the cavity of the abdomen, that there was a very large abscess in the right lobe of the liver, prominent above the general surface of the organ, and which was just on the eve of making its way into the peritoneal cavity, but which had not actually burst into it. His friend Dr. Foot had made a most careful examination of the liver, and found that not only was there a large multilocular abscess, but that there were at least three other abscesses of considerable dimensions. Dr. Lyons then pointed out the special features of the abscesses to the members of the society. In two of them there appeared to be a well-defined pyogenic membrane, but in the others the hepatic tissue was irregularly eaten into, and

formed the immediate wall of the cavity in each case, with numerous irregular chambers, and diverticula parting off in various directions. The origin of abscess of the liver was, Dr. Lyons said, very obscure, and this case threw no light upon it. They knew that persons resident abroad, and becoming affected with dysentery, not infrequently became the victims of secondary absorption through the walls of the intestinal canal, and thus became attacked with abscess of the liver. It was not so in this instance. It was worthy of note, that the bile appeared to be secreted, of a tolerably healthy character, and in sufficient quantity. The gall bladder contained a fair amount of bile, and there was no icteroid tinge present during the woman's residence in hospital.

Within a period of three years, Dr. Lyons said, he had seen no less than a dozen cases of abscess of the liver, and in one only was jaundice present. This case was one of interest, principally as regarded diagnosis, for it could not be said, in the absence of disease in the fetal vein or the intestines, what was the point of definition of the disease in this case, and in what respect it resembled many other cases of hepatic abscess, in which it was found impossible to discover the immediate origin of the morbid process.—*December* 12, 1868.

*Fibrous Tumours.*—Dr. Bennett exhibited a fibrous tumour of the uterus, which he considered worth bringing before the society, as it presented many characters worth comparing with those of multilocular ovarian tumours and some points of independent pathological interest. Of the history of the case during life he knew nothing, as he obtained the specimen from the body of a subject dissected in the School of Physic.

The tumour was freely movable in the abdomen, firm, irregular on the surface, and large enough to give the abdomen the appearance of the fifth or sixth month of pregnancy. On opening the abdomen the tumour could be lifted up, and was found attached to the pelvic region alone. The pedicle was placed in the middle line, and was formed of the uterus and vagina elongated to such a degree that the tumours could be lifted entirely out of the pelvis. The surface of the tumour was very irregular, and it was covered with secondary tumours of various sizes and shapes, some attached to the central mass by long pedicles formed of peritoneum; those springing from the pelvic part of the tumour were attached by the longest pedicles; all the secondary tumours, whether pedunculated or not, could be freely moved on the central mass. To examine the details of the tumour, it was removed with the entire pelvic organs. The uterus and vagina were laid open posteriorly, and were found to be elongated to more than double their normal length, their walls and cavity being drawn out and narrowed proportionally; the vagina at its upper part barely admitted a No. 8

catheter. The tumour was found to be connected with the fundus and anterior aspect of the body of the uterus. The broad ligaments and their contents were normal, except as regards the size of the vessels they contained. In dividing the parts in the removal of the tumour a great quantity of venous blood escaped from it into the pelvis. There were two large arteries passing into the lower part of the tumour, one of them as large as the brachial vessel, the other very little smaller. On making a section vertically through the tumour it was seen to be composed of irregularly disposed fibres collected into separate masses. At the lower portion of the section there were seen the open mouths of numerous great venous sinuses, giving the section an appearance like that of a section of a pregnant uterus.

The points of interest in the examination of this tumour were its resemblance in shape to an ovarian multilocular cyst, its free mobility in the abdomen, a property conferred on it by the remarkable elongation of the uterus and vagina, its great vascularity, both arterial and venous, and the relation which the secondary growths bore to the central mass. The physical characters which distinguished such tumours, when examined through the abdominal wall, from multilocular ovarian cysts, were the great firmness of the fibrous tumour; not a constant character, and a more essential character, the free mobility of the secondary tumours on the central mass in the case of fibrous tumour. This character was the result of the difference of mode of growth of the secondary tumours in the two cases. In a fibrous tumour the growths were exogenous, and hence more freely movable in the central mass than the secondary endogenous cysts of an ovarian tumour could be.—*December* 12, 1868.

*Cancer of the Penis.*—Mr. M. Collis said the specimen he now exhibited was neither large nor uncommon, but it presented one peculiarity for which he brought it before them. It was a cancer of the penis, which he had removed during the present week. It had as usual engaged a large portion of the prepuce, and pressed upon and somewhat involved the gland. It commenced ten years ago as a fissure in the prepuce, which was slit up, not through the fissure, but at some distance from it. This treatment, however, had no effect in checking the disease. The peculiarity of the case was the age of the man. Looking at him he should have guessed his age at forty-five, but he said he was only twenty-five, so that the disease must have commenced in his twenty-fifth year. His appearance of age was due rather to the whiteness of his hair and face than to any other features. This example of cancer disease, whether epithelial or general cancer, he did not know, was very rare at such an early period of life in this particular locality. There was no appearance of engorgement of the glands in the groin, which made an operation

hopeful. Although the disease had extended but a short way up the corpus spongeosum, he removed about an inch of the organ, so as to be sure he had gone above all diseased structures.—*December* 12, 1868.

*Ulcer of the Stomach.*—DR. STOKES exhibited the stomach of a woman, aged twenty-six, who was admitted into the Meath Hospital, November 9th, 1868. Her habits had been intemperate for several years. She was suffering from a severe, sharp pain in the region of the stomach, and from vomiting. She stated that she had been for several weeks unwell, but became much worse a week before admission, after having been kicked over the stomach by her husband. After the lapse of two or three days, having got out of bed to make use of the night stool, the nurse assisted her back, when she suddenly became faint, fell into collapse, and died in a few moments.

Upon examining the body, a chronic ulcer was found in the stomach, near the pyloric end of the lesser curvature. The peritoneal coat had been perforated, and the contents of the viscus had escaped into the cavity of the peritoneum, but there were no evidences whatever of inflammation of that membrane, for the occurrence of which, indeed, there had not been time, so rapidly did death succeed the perforation.

Dr. Stokes observed that had this woman's death occurred sooner after the receipt of the blow over the stomach, an important medico-logical question might have arisen, as to how far the latter was instrumental in causing the fatal termination. The case was further of interest, as tending to show the influence, in producing collapse, of the mere introduction of the contents of the stomach within the cavity of the peritoneum.—*December* 12, 1868.

*Exfoliation from the Tibia.*—MR. COLLIS exhibited a circular piece of bone which had come away by exfoliation from a trephine wound, which he made in the tibia of a young gentleman, who had contracted syphilis five or six years previously. He had been abroad knocking about, and had suffered from periostitis engaging the greater part of the bone. He suffered, however, in addition from a very severe pain, which he described as of a boring or bursting character. He enumerated ten professional men, colonial surgeons, ship surgeons, and some eminent surgeons in London and Dublin, who had treated him. In addition to those, he had consulted an ecclesiastic in Clondalkin, who worked great cures, and a German tattooer in Stephen's-green, who performed great wonders. He survived all these and came to him. He found there was more than periostitis existing. The young man told him that he had taken ship loads of iodide of potassium. The character of the pain resembled that found in the upper end of the tibia, in connexion with bone abscess. The entire length of the bone was thickened, and he complained of great pain. He

came to the conclusion that he could not relieve him without trephining the substance of the tibia. He proposed this, and he assented to it. The bone was not only double its ordinary thickness, but it was of such extreme density, that he broke two trephines before he got into the medullary canal, and he would not have succeeded at all, if he had not had by him Mr. Samuel Smith's augur, which enabled him, once he got into the bone, to go through it with great rapidity. The patient said that from the moment the cavity was opened the peculiar bursting sensation ceased. In a few weeks this shell of bone came away. By its thickness the condition of the bone could be judged. Mr. Collis had delayed bringing this case forward until a reasonable time had elapsed, in order to test the cure. The patient was three or four months under his care. He would not allow the wound in the bone to heal, until by degrees all the inflammatory material had drained away, and until all pain in the limb had disappeared. He was now able to walk about, and the hole in his shin had healed. This case taught them a lesson, namely, that they should examine all cases of the kind with great care ; for with a man complaining of these pains, and having had syphilis and nodes, one would naturally conclude there was nothing but periostitis the matter.— *December* 12, 1868.

*Paralysis of the Right Arm—Effusion of Blood on the Left Hemisphere of the Brain.* —Dr. Duncan said the connexion between loss of speech, and cerebral disease has been attracting so much attention of late, that I think it desirable that every case that can throw light on this obscure subject should be noticed, even although the circumstances connected with it should be more or less of a negative character. I regret that the specimen I have to bring before you to-day partakes of this negative character, and from the shortness of the time that intervened between the attack of the paralysis, and the death of the patient, we had not an opportunity of investigating, as accurately as we should have liked to have done, the mental health of the patient.

A gentleman, sixty-five years of age, had been for thirty years an inmate of the private lunatic asylum at Finglass. He was a person of eccentric habits, and laboured under marked delusions, but he was quiet, inoffensive, and generally enjoyed good health. There was no hesitation in allowing him to go out and amuse himself whenever he pleased, even without having anyone with him. I saw him on Wednesday last, in his usual good health, and he appeared to be in the same condition on Thursday. On that night one of the patients happening to see him as he was about going to bed, asked him casually how he was, and he replied, " not very well." Next morning at eight o'clock, when the attendant brought a dish of stirabout which he was in the habit of taking, his door was found locked, with the key inside, and there was no response to the

knock for admittance. Dr. Wilson, the resident, came to the door and tapped at it. The patient was observed to get out of bed and to put on his drawers. He tried to open the door, but was unable to do so. He got the key out, however, and the door was opened from the outside, when the patient was found to be paralysed in the right arm. He remained in this state until his death, on Sunday, at half-past twelve, having had on Saturday night two or three epileptic seizures. There was intelligence, so far as we could judge. He appeared to recognize the persons about him. He was in the habit of taking snuff, and on handing him the snuff-box he tried to take a pinch with his left hand ; but there was not the slightest attempt at speech.

On making a *post mortem* examination the brain was found to be of normal size and consistence ; but there was a general opacity of the arachnoid, vascular turgescence of the whole volume of the organ, and serous effusion under the arachnoid membrane. The cerebral congestion was more marked on the left side, and there was an effusion of blood to the size of a half-crown piece, on the anterior and lateral portion of the left hemisphere, just above the fissure of Sylvius. Dr. Ward made a careful examination of the brain for me, and he found at the fissure of Sylvius a good deal of congestion, but nothing he could call softening. This case, from the position of the hemorrhage, gives a considerable amount of countenance to the idea which locates the organ of speech in this portion of the brain. Still if we had not heard this theory, we should not, from this condition of the brain alone, draw a conclusion that the loss of speech or asphasia was due to this lesion. Dr. Duncan believed that the hemorrhage was the cause of the paralysis, which was evidently partial, and limited to the right upper extremity, as well as to the lesion of the faculty of speech ; and that the serous sub-arachnoid effusion was the result of the epileptic seizures, and that the absence of softening in the cerebral tissue, was caused by the short interval of time which elapsed between the primary attack and the fatal termination. — *December* 19, 1868.

*Tumour of the Dura Mater.*—Dr. LITTLE exhibited the brain of a man aged thirty-two, which presented the following morbid appearances, over the frontal convolutions on the left side : The arachnoid sac was obliterated, and the dura mater inseparably united to the grey substance beneath, as far backwards as the fissure of Rolando, except at one spot somewhat above and behind Broca's region, where a firm well-defined tumour, growing from the under surface of that membrane, and the size of a filbert, had made for itself a bed in the brain structure. The patient was brought to the Adelaide Hospital, in October, by his wife. He had a vacant expression of countenance, and was feeble on his limbs. When she let go his arm he fell backwards, or rather kept backing until he

came against the wall. He understood what was said to him, but had a great difficulty in finding words to reply. Dr. Little knew he had been seven years in Lower Bengal, and asked him where he had been, but he could only remember Calcutta ; he could not tell the name of the street in which he lived. He asked him had he ever had any venereal disease, and, after thinking for a long time, he said gonorrhea. He asked him again whether he had had any other disease of that kind, and after thinking for a great many minutes, he at last said " chancre." He had also a difficulty of articulation ; he spoke like a person with an acute tonsillitis. On examining him he found an induration at the duplicature of the prepuce, and on his legs several scars having the appearance left by syphilitic eruptions. From the wife he learned that the man was thirty-two years of age, that he went to India in 1858, as a soldier, came home in 1865, and married in 1866. When his wife was pregnant three months she miscarried. She became pregnant again, and again miscarried at seven months. Since his death she gave birth to a living, healthy child. For some time before and after marriage he suffered severely from pains, specially acute in his shin bones, and which were worse at night, otherwise his health was good until the summer of 1867, when he became irritable and cross, and frequently had to make water. In October, 1867, he was suddenly seized one evening with a violent pain in the left side of his head, which continued as long as he was able to give any account of it. There was no other symptom but this pain up to July, 1868, when she noticed him becoming silly, and on the 3rd October, he had a succession of epileptiform paroxysms. After these, three new symptoms presented themselves, difficulty of articulation, difficulty of swallowing, and great feebleness of the limbs. In that condition he. came into hospital. He lived a few weeks, becoming more feeble every day, and passing his motions under him. The only morbid appearances were those presented by the brain. They corresponded with those described by Dr. Wilks in connexion with syphilitic disease of the brain, the whole subject of which was so ably dealt with by Dr. Barton in his recently published work.—*December* 19, 1868.

*Rupture of the Bladder in the Female.*—Mr. M. Collis exhibited a specimen of rupture of the bladder in the female, resulting from external injury, a lesion so very rare, that some considered its occurrence as barely possible. The patient, who was a woman of intemperate habits, retired to bed on the night of the 7th September, without relieving her bladder, and got up in the course of the night for that purpose. Not succeeding, she endeavoured to get into bed again, but fell across the footboard. She fainted at once, and was lifted into bed, and in the morning complained of inability to pass water, and said that she had felt something give way. On the third day after the accident she was brought

to the Meath Hospital in a state of collapse.   A large male catheter was introduced, and about half a pint of urine, mixed with blood and clots, drawn off.   About the same quantity trinkled away afterwards, and she voluntarily passed water more than once.   She died upon the following day, the fourth from the date of the injury.   There was an ecchymosis on the front of the abdomen, where the blow had been received.

Upon examination, *post mortem*, a large transverse rent, which admitted the points of the fingers, and with rugged, irregular edges, was found in the anterior wall of the bladder, which was in a contracted state. This large aperture communicated with a gangrenous cavity of considerable size in the neighbouring cellular tissue.   There was no communication with the cavity of the peritoneum, which, however, contained a pint of turbid serum, and was inflamed in the vicinity of the bladder.   In his remarks on the rare occurence in the female, of the injury in question, Mr. Collis alluded to the memoir of M. Honël, in which forty-five cases of rupture of the bladder were recorded; five only of these occurred in females, one of them, moreover, being an example of spontaneous rupture.[a]   He also alluded to the explanation of the circumstance offered by the late Dr. Harrison, who ascribed it not only to the greater size of the female pelvis, but also to the fact, that the distended bladder in the female, " does not incline so much backwards as in the male; on the contrary, it enlarges more forward, and in the transverse direction; while the uterus and its lateral folds may assist to break the shock of any external violence applied to the hypogastric region, and to prevent the direct concussion of the bladder against the sacral promontary." [b] Mr. Collis alluded to a case recorded by Professor R. W. Smith in the twenty-fifth Vol. of the *Dublin Journal of Medical Science*, of a female aged fifty, who, while intoxicated, had fallen across the edge of a tub, and died at the end of five days.   The rent in the bladder was very large, transverse in its direction, and situated in the posterior and upper part of the organ, where covered by peritoneum, and different from what occurred in the case before the society.   In conclusion, Mr. Collis drew attention to the few recorded instances of recovery from this formidable injury; one was related by Mr. Chaldecott, in the *Lancet* (October, 1846); another occurred in the practice of Professor Syme; a third in that of Denonvilier; and lately a fourth had been recorded by Dr. Thorpe of Letterkenny. —*December* 19, 1868.

[a] Des Plaies et des ruptures de la vessie.  Thèse de. concours pour l'aggrégation, Paris, 1857.
[b] Dublin Journal of Medical Science, Vol. ix.

## TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

*Limited Empyema on Right Side—Evacuation in Right Hypochondrium— Recovery.* Communicated by Dr. HAYDEN, M.R.I.A.; Fellow King and Queen's College of Physicians; Physician to the Mater Misericordiæ Hospital; and Professor of Anatomy and Physiology in the Catholic University.

JOHN C, aged thirteen, well grown for his years, was admitted under my care on the 23rd September last; had been an inmate of the hospital from the 17th to the 27th July preceding; was treated for pleuritis of the right side, and discharged on the latter date in fairly good health, according to the entry in hospital register. Six weeks prior to the date of first admittance he was attacked with pain in the lower part of right side after bathing.

When re-admitted under my care on the 23rd September he was pale, but not emaciated, and perspired occasionally at night; no cough beyond a slight and occasional 'hem'; no expectoration; bowels free; decubitus dexter, or rather diagonal; sleep and appetite good; had never been jaundiced; pulse 110; respiration free and tranquil. There was considerable projection of the ribs over the right hypochondrium, and immediately below the free border of the costal cartilages, and in front of the right lobe of the liver, the abdominal wall was projected by a liquid accumulation which fluctuated distinctly, and pointed in front near the edge of the costal cartilages.

This intumescence extended downwards nearly to the level of the umbilicus, where it presented a well-defined line of limitation, gradually thinned off, and corresponding to the inferior margin of the right lobe of the liver, which was distinctly felt forming for it a border of about a quarter of an inch in depth; towards the left side it extended to the middle line, where it abruptly terminated. There was much tenderness, but no pain in the seat of swelling. The right side of the chest was absolutely dull in front to the level of the nipple, and backwards to the same level, as far as the median axillary line; over the entire of this region no respiratory or other sound was audible, and no vocal thrill was to be felt. Over the remainder of the right side percussion-resonance was clear; above the level of the nipple anteriorly, latterly, and posteriorly, respiration was puerile, whilst inferiorly and posteriorly it was feeble and somewhat tubular, but otherwise normal; the apex of the heart pulsated in the third left intercostal space, internal to the nipple, and close to the margin of the sternum.

*Treatment*—Nitro-hydrochloric acid in a bitter infusion; wine, nourishing diet, and constant poulticing.

The swelling increased in size gradually, and soon pointed over a larger surface, which was now about two inches in diameter; percussion-dulness extended one inch and a half above the nipple. The boy's general health continued satisfactory, but his sleep was more frequently interrupted and less refreshing, and he complained of tension and distress in the side.

The adhesion of the tumour to the abdominal wall being to my mind satisfactorily established, I punctured it with a straight bistoury on the 9th October, having previously determined the nature of the accumulation by means of an exploring needle. About three quarts of healthy-looking pus were slowly discharged in the course of that day and following night. On the next day I found the dulness of the side replaced by tympanitic resonance; there was likewise in this situation metallic tinkling when the patient coughed; distant respiratory sound of a somewhat metallic quality, but no amphoric phenomena.

A close fitting swathe was adapted to the trunk and tightened from day to day; sulphate of quinia was given, with an abundant allowance of wine and nutritious diet. The side gradually subsided to the normal level, the discharge became less from day to day, the wound contracted, and the boy was allowed to get out of bed on the 23rd October, and on the 8th November he was discharged, and returned to Gormanstown, his native place. For some few days previously there had been rather free epistaxis, for which gallic acid was administered with success; there was, however, no discolouration or sponginess of the gums.

At the date of discharge the following was the boy's condition, viz., pulse 96, and of good volume; appetite good, and can sleep in any posture; no cough; is still pale; heart and liver in natural situations; right side tympanitic in front from one inch above nipple to base, and laterally as far as axillary line; here respiration is hollow, or metallic in quality; tubular and distant, but not amphoric; when he coughed a faint click, much more distinct a week previously, was heard; over the entire posterior surface of right side, and laterally behind axillary line, respiration was vesicular, but weak, and accompanied by coarse crepitant râles, and to the same extent percussion-resonance was somewhat less clear than on the opposite side; slight contraction of right side, most manifest posteriorly.

I may remark here, that for several days subsequent to the operation of puncturing, a circumscribed emphysema, about as large as an orange, was developed over the border of the right costal cartilages when the boy coughed, but subsiding immediately afterwards; this corresponded to the most prominent point of the swelling previously to evacuation, where the abdominal wall had been reduced by progressive absorption, to little more than the integument. Diffusion was manifestly prevented

by a barrier of effused lymph. This little swelling disappeared after a few days, but was the seat of extreme tenderness whilst it lasted.

The history, symptoms, and signs in this case may be thus summed up.

*History of pleuritis three months anterior to the date of admittance.*—No jaundice, rigor, severe pain, or serious constitutional disturbance.

*Symptoms at date of admittance positive and negative.*—Palor; weak pulse; decubitus towards right side; fluctuating tumour in right hypochondrium, based by a margin of solid hepatic surface; displacement of liver downwards; displacement of heart upwards; projection of right inferior ribs; no cough; expectoration or dyspnea; no rigors, or hectic symptoms.

*Thoraic physical signs.*—Dulness; absence of respiration, and of vocal thrill anteriorly, and to some extent laterally, to level of nipple; posteriorly, and likewise laterally to axillary line, respiratory sound was faint and slightly tubular, but in other respects normal, and here percussion sound was clear.

The diagnosis of liquid accumulation in the right hypochondrium was easy, and promptly made; but not so the determination of its nature and its source.

The differential diagnosis lay between the following, viz. :—

1. Hepatic abscess with vertical enlargement of the liver.
2. Hydatids of the liver.
3. Perihepatitis with displacement upwards of the diaphragm.
4. Circumscribed empyema with perforation of the diaphragm, and displacement of the heart and liver.

The first mentioned disease, hepatic abscess, was at once rejected as being incompatible with the brief duration (two months) of illness, the absence of constitutional disturbance, of icteric tinting of the skin and conjunctivæ, and of biliary and other colouring matter from the urine.

Hydatid cyst was scarcely reconcilable with the short period of illness, and the youth of the patient, though otherwise not objectionable theoretically.

The supposition of perihepatitis with effusion will readily find acceptance when the history of antecedent right pleuritis is borne in mind.

Writing on this subject, Frerichs says—" In many cases perihepatitis is an inflammatory process which has spread from some of the neighbouring organs; for example, in cases of right pleurisy, we occasionally observe a participation of the serous covering of the diaphragm and of the liver."

It will be observed that most of the special signs presented were reconcilable with this view ; for example, the peculiar limitation of dulness and of absence of respiration in front and on the side of the chest ; the vertical displacement of the heart and liver ; and that the presence of a limited collection of fluid in the right hypochondrium, without constitutional symptoms, or those specially referable to the liver, would likewise find in this view a rational explanation.

For several days I rather inclined to this opinion, but subsequently felt disposed to abandon it, from the general complexion of the case, rather than for any definite reason.

The diagnosis of empyema entering the abdomen by penetrating the diaphragm was rather presumptive than positive, and rested mainly upon the history of pleuritis ; the boy's aspect ; the occasional night sweats, and the slight 'hem' rather than cough when he turned upon the left side.

Dr. Stokes gives as one of the differential diagnostic signs between hepatic enlargement and pleuritic effusion : "the clearness on percussion of the upper and middle portions of the chest," and "the existence of the vertical displacement of the heart upwards" in enlargement of the liver.

These diagnostic signs are, no doubt, of great value as between *diffused* empyema confined to the pleural cavity, and simple hepatic enlargements cases to which alone Dr. Stokes would apply them, but the former may fail where the effusion is circumscribed, and the latter where an hepatic abscess, the product of an enlarged liver, finds entrance into the right pleura, or where an empyema, passing in the opposite direction, perforates the diaphragm and distends the right hypochondrium. In the former case there may be lateral displacement of the heart with enlargement of the liver, and in the latter, as exemplified in this case, vertical displacement of that organ upwards, the result of pleuritic effusion.

Doctor Williams mentions a case in which an empyema pointed in the right hypochondrium, and was mistaken for abscess of the liver.

Dr. Townshend describes a case of abscess of the liver pouring its contents into the areolar tissue of the right side, in front of the ribs, by penetrating the diaphragm, yielding fluctuation, and quotes a similar case from Morand.

Andral, in his *Clinique Medicale*, Observation 20, gives the following case :—

A phthisical man, about three weeks after admittance into hospital, was attacked during an evening exacerbation of hectic, with acute pain in the line of the left costal cartilages, accompanied with quick and shallow respiration, which was entirely costal ; the pain next extended

into the hypochondrium and groin. He sank rapidly, and died about a month from the date of admittance. Large tubercular cavities were found in both lungs; the base of the left lung adhered to the diaphragm; and surrounded and strictly limited by this adhesion was a vast collection of pus, which passed through an opening in the diaphragm, of an inch and a-half in diameter, with blunt and smooth edges, into the abdomen; it seemed to have pushed the peritoneum before it, and lodged between the spleen and the walls of the abdomen, where it was surrounded by adhesions, and contained in a large cavity with villous walls.

In this case, which has been so often quoted by writers on empyema, there was no evidence during life of a purulent collection in the abdomen, and no diagnosis made of penetration of the diaphragm. There is, moreover, no statement as to the evidence afforded by auscultation of the left side, which probably would have been of no special value, owing to the existence in the corresponding lung of extensive tubercular excavation.

Andral gives three other cases of diaphragmatic pleurisy with empyema, in each of which the suffering of the patient was of an extreme character, all proving fatal, and intimates the opinion that the accession of severe pain and great dyspnea coincided, in these cases, with extension of inflammation to the diaphragmatic pleura. There is no evidence that the boy, whose case I have narrated, suffered pain of even moderate severity at any period of his illness, though the phrenic pleura must have been engaged, and the diaphragm perforated.

Chomel is of opinion that the sitting and dependent posture, the acute pain, delirium, sardonic expression of face, &c., met with in a few cases of diaphragmatic pleurisy, are *not* due to this cause alone, else why their absence when the entire pleura is engaged, as it commonly is.

I have seen, however, at least one case of pleuritis confined to the diaphragm and adjacent portion of the costo-pulmonary pleura, in which the pain and distress were most agonizing, and altogether in excess of the constitutional irritation and physical signs.

The character of the effusion in chronic pleuritis is of great importance in regard to the prognosis. Laennec says that in circumscribed or partial pleurisies the effused fluid is generally puriform.

Dr. Townshend adds that the spontaneous evacuation of fluid, by perforation of the lung or parietes of the chest, "occurs chiefly, if not exclusively, in those cases where the empyema is circumscribed."

The case which I have submitted to the society, was, therefore, one of circumscribed chronic effusion into the right pleura, with perforation of the diaphragm, and eccentric displacement of the liver and heart.

In the well-known case of Andral, already quoted, the peritoneum seemed to have been detached from the diaphragm by the descending collection of pus, for which it formed an envelope in the left hypochondrium. In my case the pus seemed to be strictly limited towards the left by the falciform ligament of the liver, and I was inclined to think, owing to the accurate manner in which it followed the convex surface of the liver. and seemed to be limited by it in its downward course, that it had detached the peritoneum from the diaphragm and liver, and occupied a position external to that membrane. It is a fact worthy of being borne in mind that purulent or other collections usually encounter more difficulty in passing through a serous membrane from the dorsal surface than in the opposite direction; this singular endowment may be intended as a preservative against liquid irruption into serous cavities.

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# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.
## THIRTY-FIRST ANNUAL SESSION.

First Meeting, Dr. JOHNSTON in the Chair.

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### MEMOIR OF THE LATE SAMUEL LITTLE HARDY, M.D., F.R.C.S.I.
#### By Dr. M'CLINTOCK.

WHEN the Council of your Society did me the honour of requesting that I should put together some brief memorials of our late lamented President, they acted under the impression that as an old and intimate friend of his I might be supposed to have a close acquaintance with the history of his professional life.

Though the time wherein to prepare this biographic sketch was very short, I nevertheless undertook the task without hesitation, being glad to avail myself of this public opportunity of testifying my deep regard for his memory, and of paying an humble but well-deserved tribute to his professional character and private worth.

The life of a medical practitioner seldom contains matter to engage the attention of any but those of his own profession, or within his circle of acquaintance. It is wanting in the stirring incidents or exciting passages which impart variety and interest to the history of an individual. The present instance forms no exception to this rule. Still, the biography of a man who, without much adventitious assistance, achieved success, and by honourable exertion reached a position far above mediocrity, cannot fail to be interesting and instructive to his cotemporaries and successors engaged in the same professional pursuit.

It is very far from my wish or intention that the present communication should be merely a eulogium on the character of my late friend, much though I esteemed him; and by a eulogium I mean a piece of panegyric extolling his merits and suppressing his failings. Such a course would ill accord with the stern honesty of his nature, and would be beside my present purpose, which is to set before you a faithful, though necessarily brief, outline of his professional career.

And here let me mention the circumstance, that this is the third occasion on which I have appeared as the biographer of members of our society. The first time I figured in this capacity was in the year 1851, when Dr. John C. Douglas was the subject of the memoir. Again, much of my inaugural address two years ago was taken up with the life of Dr. Charles Johnson, my respected master at the Lying-in Hospital; and now it is my sad privilege to read the memoir of an attached colleague. The two former were very much senior to me, both in professional standing and in years: therefore, to act as their biographer was a common-place matter, and excited no particular emotion beyond the sorrow I felt at losing old and valued friends. But now the case is far different. My own cotemporary, my fellow assistant, my confidential friend, has been cut off in the prime of manhood, and at the height of professional activity, when he had every prospect of adding to his reputation and emoluments. His removal leaves a blank in the inner circle of my professional acquaintance which will never be filled up.

It is time, however, to enter upon the task assigned to me.

Samuel Little Hardy was born at Coalisland, county Tyrone, in the memorable year 1815. When eighteen years of age—viz., in June, 1833—he was indented to the late Dr. Ephraim M'Dowell, on whose decease, in 1835, he, along with some other apprentices, was transferred to the late Dr. Hutton, the colleague of M'Dowell at the Richmond Hospital, and, consequently, here it was that Hardy received his medical education.

The medical student, as well as the medical practitioner, incurs no small risk of taking some of the infectious diseases with which he must necessarily come into contact in the daily routine of professional life. The mortality from this cause among pupils must be pretty considerable, but what its exact amount is I have no data for computing. On two occasions, while yet a student, Hardy's life was placed in imminent peril from diseases caught in the course of his hospital attendance—at one time from erysipelas, and at another from scarlatina.

He obtained the L.R.C.S. in 1839, and subsequently the M.D. of Glasgow University. After spending a few months at Paris he took up his residence at Cookstown with the view of establishing there. He only remained here about six months, however. He then seems to

have formed a resolution of coming to settle in Dublin, and of entering as a competitor in the arduous struggle for fame and fortune which is unceasingly going on in every great city. What attracted him to the metropolis, or repelled him from the country, I know not; nor can I say why he adopted midwifery for his special pursuit. All I know is, that it was arranged that he should be Dr. Charles Johnson's first assistant at the Lying-in Hospital, and that his election to this office took place October, 1842, the late Dr. Robert Johns being at the time senior assistant. For several months previously Hardy acted in the capacity of clinical clerk to the hospital, and during this probationary period he underwent an admirable preparation for the laborious and responsible duties which devolve on an assistant in this institution. It was in the spring of 1841 I became acquainted with him, the wards of the Lying-in Hospital being the scene of our first, as it afterwards was of our closest, intimacy, and from that time to his death we lived on terms of the warmest friendship. For two years and a half we resided together in the hospital. The retrospect of those times brings up many pleasing recollections. Often and often did his happy equanimity of temper, his buoyancy of disposition, cheer and encourage me; and not less often did his sagacious counsel and prompt action assist me at the bedside of many a trying and difficult case.

It is not to be supposed that this twenty-seven years of friendship was a period of unbroken harmony. We had a few tiffs and differences, of which I must say in candour and penitence, " Magna pars fui." But these ruffles never lasted long, and generally ended in more firmly cementing the bond of friendship subsisting between as; just as, " iræ amantium, reintegratio amoris est." He was elected a member of this body in April, 1841, and from that hour to the end of his life he never ceased to be the firm and zealous friend of the society, through all its varying phases of adversity and prosperity sticking to it with unfaltering loyalty. The history of his connexion with it will serve to show more forcibly than any language the extent of our obligations to him, and the magnitude of the loss which our society sustains by his removal.

For five years—viz., from 1842 to 1847—he acted as treasurer of the society. At that period of our history the office in question was a perfect anomaly. A treasurer there was, and he had irksome duties to perform, but the charge of any funds was quite a rare and exceptional part of those duties, inasmuch as the society was in a state of chronic penury, habitually in *articulo mortis,* and just kept from dissolution by the liberality of a few zealous members, himself among the number. For five years, as we have said, Hardy carried on this struggle, but even he, with all his energy and perseverance, could not succeed in effecting any permanent improvement in the financial condition of the society.

In October, 1850, he was elected our secretary, and he retained this office for two sessions.   He took out the license of the King and Queen's College of Physicians in 1852, and was elected a Fellow last October, but his death intervened before the day for his formal admission to this rank.

His communications to our society were very numerous.   I find—or, rather, Dr. Kidd has obligingly done so for me—that altogether Dr. H. contributed nineteen papers to our meetings.   These are of a practical nature, and consist chiefly of clinical reports.   The first, and, perhaps, the best of them, was his memoir on ergot of rye, published in the *Dublin Medical Journal* for May, 1845.   It is no exaggeration to say, that the series of clinical facts and observations contained in this paper is perhaps the most minute and most accurate that has ever appeared on the same subject.   Not only was the utmost care used, as I well know, to guard against mistake or fallacy, but the observations were in every instance noted down on the spot.   Indeed, Hardy was a most painstaking and industrious casetaker, and had accumulated a large number of notes and clinical records, but from the want of sufficient attention to classification and arrangement the practical value of this rich store was somewhat lessened.   I may here be permitted to mention, that in preparing the work on midwifery, of which Dr. H. and I were conjointly the authors, it fell to his lot to tabulate all the cases, and transcribe most of the clinical histories, and a very laborious part of the business this was.

Nearly all his conclusions in the memoir on ergot have been confirmed by other observers.   The correctness of one deduction, however, has been called in question.   Dr. Hardy maintains that ergot of rye acts upon the child in a physiological manner; that is to say, through the maternal blood, and independently of any effect that the ergot may produce upon the uterus.   At the time this memoir was written I held the same view with regard to the *modus operandi* of ergot upon the fetus; but subsequent experience led me, and Dr. H. also, I believe, to alter this opinion.[a]

Dr. Hardy makes special allusion in his memoir to the use of ergot as a preventive of post partum flooding, and he particularizes three periods in the course of labour when the drug may be given with such intention. Now, I believe, nay, I am quite certain, this was the first time the use of ergot as a prophylactic against uterine hemorrhage had been described, and whatever merit attaches to this priority clearly belongs to him.   Dr. Hardy derived his knowledge of this practice from Dr. C. Johnson, who was in the habit of following it.   A paper by Dr. Beatty,

[a] At page 484 of the thirty-ninth volume of the *Dublin Quarterly Journal* (May, 1865) is a paper on "The Action of Ergot of Rye upon the Fetus," in which I have brought forward reasons for believing that the action of the ergot on the child is dependent entirely on the uterine contractions, which it may excite.

in which he describes this special use of the drug, appeared in the *Dublin Quarterly Journal* for May, 1846, but it is right to state that some of the cases therein adduced to exemplify the good effects of ergot as a preventive, date so far back as the year 1835.

Another important point in Dr. Hardy's memoir was to show that the time when danger arises to the infant, after the administration of ergot, is variable, and that the only reliable indication of its life being threatened is the state of the circulation as revealed by auscultation of the fetal heart.

This paper on Ergot was read to our society April, 1845, and was published, as I have stated, in the *Dublin Medical Journal* for May of same year.

His last communication to this society he read at the meeting held in June of this present year, and it was published two days after his death in the recent (November) number of the *Dublin Quarterly*. In it he relates some interesting and striking cases of scarlatina occurring as a complication of the gravid and puerperal states.

Time does not permit of my giving any analysis of his various other literary contributions to our meetings. Let it suffice to say, that they are all more or less of a clinical character, and bear the stamp of an eminently practical mind. Soon after the discovery of chloroform, attention was directed to its employment as a local anesthetic. Dr. H. devoted much consideration to this subject, and in the *Dublin Quarterly Journal* for November, 1853, he published a paper on it, wherein he describes a very simple and efficient apparatus for applying chloroform vapour to any part of the cutaneous surface, or to a mucous canal. This seems to have been the first announcement of such a practice, and it attracted considerable notice, and gained some reputation for its author.

During the former régime of our society, Dr. Hardy was elected a vice-president, and subsequently a president. Under our present reformed constitution he also enjoyed similar honours, though in the capacity of president he was not permitted to outlive his year of office. His life was devoted to one pursuit. The last effort of his pen was given to our society, and, by a singular coincidence, he died in the enjoyment of the highest obstetric honour we could confer upon him.

Thus, you see, he filled in our society every position it was possible for a man to hold—viz., member, contributor, treasurer, secretary, vice-president, president, and honorary president, his connexion with us extending over a period of more than twenty-seven years. It is questionable whether any other society could produce a parallel for such lengthened and varied services.

So much, then, for his history as far it relates to this society. Here, without doubt, he did his duty to the best of his ability, and amongst

us, at all events, his name must ever be remembered with honour. I had the very best opportunity of seeing and knowing how he acquitted himself as an assistant of the Lying-in Hospital, and I boldly venture to affirm that no man more conscientiously fulfilled the arduous and anxious duties of that post with such unflagging zeal and thorough devotion. His hospital business was his first and his constant care; and never for one moment did he let his private interest or recreation interfere with its due discharge. By permission of the master, Dr. Johnson, he took a part in the regular courses of instruction given to the pupils, lecturing upon the signs and diseases of the pregnant state.

Shortly after the expiration of his assistantship at the Rotundo, Dr. H. was elected a medical officer of the Pitt-street Institution for Diseases of Children. Of late years he and Dr. W. Moore had the exclusive management of this excellent medical charity.

A Government Commission recommended, in the year 1855, that a complete medical school should be attached to Steevens' Hospital. In furtherance of this object, Dr. Hardy was appointed obstetric physician to the hospital, and was granted a ward for the treatment of female complaints. On the opening of the school he became one of its staff, the Chair of Midwifery being assigned to him, which post he held up to the time of his death.

In the middle of 1846 Dr. H. took up his residence in Molesworth-street, the same street in which Johnson, Montgomery, and Beatty each made a successful start in practice. The house he occupied (No. 29) is entitled to some medical consideration. It was originally built and inhabited by the late Dr. John Beatty. It was next occupied by his son, Dr. Wm. Beatty, to whom succeeded Dr. Hardy, and from his hands it passed into the possession of Dr. M'Cready, its present proprietor. It stands on the site of what was the town residence of the Right Hon. John Forster (subsequently Lord Oriel), the last Speaker of the Irish House of Commons.

Dr. Hardy left Molesworth-street in the early part of 1862, and moved into No. 9, Merrion-square North, the house previously occupied by Sir H. Marsh. Now, it might reasonably be supposed that such a change of residence would be sure to exercise a very decided effect in improving his practice. But this is not borne out by the facts. His professional receipts for the year 1862 were actually £77 less than those of the preceding year, when living in Molesworth-street. Nor was the average yearly increase of his income, whilst living in Merrion-square, at all equal to the average yearly increase during his residence in Molesworth-street.

All this tends very forcibly to show—1st, That a medical practitioner needs to weigh the matter well before changing his residence, even though the change, so far as house and locality are concerned, be

altogether for the better. And 2nd, That a large house in a fashionable situation may not be so conducive to the increase of practice as is commonly supposed.

As a practitioner, Dr. Hardy was, in the fullest sense of the word, a very successful one; not merely successful in getting patients, but successful also in curing them, for the former is not always or necessarily a consequence of the latter. Many an indifferent practitioner can boast of plenty of patients; and *vice versa*, many a good one has very few! The largeness of Dr. H.'s practice, however, was mainly, if not entirely, the result of his character for professional skill and extreme attention to his patients. The vigilant care he bestowed on the sick, whether in hospital or in private life, was constant and unreserved. He was utterly regardless of trouble so long as he could be of any use. He was always sanguine, and never let the apparent hopelessness of a case tempt him to relinquish the employment of remedial agents. To some his practice might seem to savour of the "nimia diligentia;" but assuredly this is a lesser error than the opposite and more prevalent one of the "nimia negligentia."

His indefatigable exertions occasionally succeeded in rescuing a patient from almost inevitable death; and I need not say how greatly such a triumph is calculated to adorn a reputation, and secure the attachment of devoted friends.

Dr. H., as you all know, had a well developed and muscular frame. In former years he was very fond of practising gymnastics, and was accustomed, among other exercises, to wield a pondrous club of immense size, and work a pair of dumb bells each 56lbs. weight. Now, it seems not at all improbable that the abdominal aneurism of which he died may have been originally produced by some of the violent bodily efforts necessarily required in the performance of such feats of strength.

The history of his last illness well deserves being recorded. It seems that for some considerable length of time—months at all events— before his death he was liable to attacks, of rather severe pain in the left lumbar and dorsal regions, which were supposed to be rheumatic, and for which he was in the habit of applying strong anodyne embrocations. On Tuesday, 27th October, not feeling very well, he went out to dine and sleep at a friend's house near Blackrock. On arrival at the house he was suffering so much pain in the abdomen that he went direct to his bedroom, and applied a hot bran poultice. In the course of the evening Dr. Pollock, of Blackrock, saw him, and he has obligingly furnished me with the following details:—" About seven p.m. I found Dr. H. in bed complaining of pain resembling colic in the left iliac region, and this, he told me, had commenced about three o'clock p.m., when at home in his study. Opening medicine was required, and

I prescribed an aperient which brought away some scybala. Not feeling relieved by this, he got an opiate suppository, after which he slept for some hours. On visiting him the next day (28th) he still complained of the pain, and referred it to the region of the lumbar vertebræ, and shooting into the iliac and hypogastric regions. He continued restless and uneasy during the day, though taking small doses of morphia. I saw him again in the afternoon, and applied the spinal ice bag, which gave almost immediate relief, and he kept applying it himself alternately to his back and abdomen until eleven p.m., when he got some hours of broken sleep. The next morning (29th) the pains were still present, but not at all so acute, and he appeared cheerful in manner. Whilst I was away visiting a distant patient he became suddenly worse, with symptoms of collapse. His colleague Dr. Moore saw him about four p.m., and found him almost pulseless, and cold in the extremities, but clear in his mind, and still complaining of pain in the back. Dr. Moore ordered him some brandy, and a pill containing opium, every two hours. At eight p.m. I again visited him; he was then sleeping easily. About half-past nine p.m. I was hurriedly summoned, but when I reached the house he had expired. On inquiring, I learned that he awoke some time after my visit at eight o'clock, and said he felt much easier. A few minutes afterwards he was seized with a sudden pain of a very excruciating character, and died almost immediately, death being preceded by some slight convulsive moments, apparently from the intensity of pain. I have forgotten to mention, that during his illness the urine was very high coloured, and the pulse was about 60, and feeble."

An examination of the body was made by Dr. Edward Hamilton, assisted by Dr. Pollock, and I now subjoin Dr. Hamilton's report of the appearances found in the abdomen :—

" On opening the abdomen a quantity of fluid blood was found in the lower part of the cavity, filling the recto-vesical pouch. A small rent in the peritoneum allowed the blood to flow into the peritoneal sac from the areolar tissue behind it, in which there existed an extensive effusion of blood. This was traced to a large aneurismal tumour of the aorta, behind the mouth of the celiac axis. The second and third lumbar vertebræ were slightly rough and eroded by the pressure of the aneurism, which had burst and become diffused into the recto-peritoneal areolar tissue."

Coupling the symptoms during life with the morbid appearance, it seems more than probable that rupture of the sac took place forty-eight hours before death, the blood being extravasated underneath the peritoneum, and on the bursting of latter life was instantly destroyed. This course of events—viz., sudden death by rupture into a serous cavity, supervening on a diffused aneurism with hemorrhage into cellular structure—

very much resembles what occurred in the case observed by Dr. Law, which was the first of the kind to be put on record.

With regard to the moral phase of Dr. Hardy's professional character, I feel that, surrounded as I am by so many of his friends and associates, there is little necessity to offer a single observation. You will all bear me witness when I say that he was a man without guile or hypocrisy. In all intercourse and relations with his medical brethren he pursued the straightforward path of truth and honour, his code of ethics being comprised in this one good old maxim, " Do as you would be done by." He lived on terms of harmony and good fellowship with all the members of his own profession, and I am not aware of his ever having had a quarrel or misunderstanding with any one of them.

The life history of every man, no matter what his rank or calling may be, will, if carefully studied, be found to illustrate some one important truth, to yield some practical lesson of utility. What, then, we may ask, is the moral to be drawn from the history I have endeavoured to put before you? Just this: that shining qualities, or great mental endowments, are by no means essential to success; but that he who strives honourably and earnestly, applying himself with persevering diligence and singleness of purpose to the duties of his profession, must, sooner or later, command respect, and reap an abundant reward. " He that walketh uprightly, walketh surely."

Having now finished the task committed to me, it only remains to offer my sincere apology that this address is not more worthy the theme and the occasion; but such as it is I offer it as a tribute of respect to the memory of my worthy and valued friend, our late President.

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## TRANSACTIONS OF THE CORK PATHOLOGICAL AND MEDICO-CHIRURGICAL SOCIETY.[a]

*Specimen of Phthisical Cavities in Lungs, with Notes of Case.* By JOHN WALL, A.B., M.D., L.R.C.S.I.; Physician to the Cork Workhouse Hospital.—Read Nov. 11, 1868.

JAMES GAMPIN, aged thirty, admitted into the Cork Workhouse Hospital under my care July 16th, 1868. He was then in an advanced stage of phthisis. I ascertained that his illness commenced with cough eighteen months previously, several attacks of profuse hemoptysis having occurred before admission. Upon examination I discovered that the entire of the right side expanded feebly, was extremly dull on percussion, both anteriorly and posteriorly; large crepitation and pectoriloquy were almost everywhere audible in it.

[a] These Reports are furnished by the Secretary, Dr. Purcell.

The left side was not at all so much engaged, but its apex gave out a dull sound when percussed. The respiratory murmur was coarse in the infra-clavicular and mammary regions, accompanied by a clicking sound at the termination of inspiration; expiration prolonged. Bronchophony also distinctly observed here. He presented the usual hectic appearance; there was much constitutional disturbance and emaciation. The treatment consisted of generous diet, combined with sedatives and counter-irritation over right side. These measures were, however, quite ineffectual in preventing the further progress of the disease. He gradually became more feeble, and died of exhaustion, Nov. 8th, 1868.

*Post mortem.*—Upon raising the sternum some fluid escaped from the left pleural sac. The right lung was so intimately adherent to the corresponding side that great difficulty was experienced in removing it. When examined it was found to be contracted to about half its normal size, was completely infiltrated with tuberculous matter, and riddled with small cavities. The left lung showed several cicatrices at its apex, evidently the result of former cavities. The upper lobe contained masses of crude tubercle; the lower lobe was apparently healthy, with the exception of some hypostatic congestion. Both lungs, especially the right one, were thickly coated with false membrane.

This case appears to me to present many features of peculiar interest; amongst others it shows with what tenacity life is occasionally preserved. Here we find a man able to perform for several months the arduous duties of a sailor, whose right lung appeared to be utterly destroyed by a disease which had also involved the greater portion of the left.

*A Case of Depressed Fracture of the Skull.* By T. C. SHINKWIN, M.D., Surgeon to the Cork North Infirmary.

JOHN COLLINS, aged forty-six, married, admitted into the North Infirmary on the 20th June, 1868, with symptoms of compression of brain.

*History.*—His friends state that, whilst attending a funeral about three weeks ago, he was knocked down in a row, and when on the ground received a blow of a stone on the left side of the head. He was taken home, the cut bleeding very profusely, and placed in bed, where he lay insensible until about eight o'clock the following morning (that was about thirteen hours from receipt of injury), when he became conscious, sat up, and eat and drank some bread and tea for breakfast. He went on for some days, part of the day in bed and another portion up, when, on the recommendation of some friends, a medical man was sent for, who, on examining him, told his wife that there was fracture of the skull. For three days before his admission to hospital he was becoming more and more insensible. Dr. Golding saw him on

the 20th, and found him perfectly comatose; pulse 70; respiration very laboured; pupils insensible to light, and greatly dilated; unable to swallow, and passing urine and feces involuntarily.  Dr. Golding, on examining his head, found a healing wound over left parietal bone about two inches in length.  On making an examination with the probe he found that the patient had depressed fracture of the skull, and that the instrument passed through a small chink in the bone and entered the brain; there was immediately a flow of thick pus from the opening, which appeared to ease some of the symptoms under which the patient suffered.  Seeing that the case was so unfavourable, Dr. Golding advised that the man should be brought into hospital, giving him a little stimulant before moving him.  So anxious was Dr. Golding about the case that he met the car at the hospital gate, and was surprised to hear that on the journey the patient had so recovered consciousness as to ask the car to be stopped, and got out and passed some water.  On my seeing him about half an hour after admission, he was able to tell me his name, and spoke comparatively rationally; but if left alone would drop off into a slumber.  I found the wound and fracture just as described, and could pass the probe into the brain, with no resistance whatever being given to it, for, at any rate, three to four inches in a direction forwards and downwards.  There was a consultation that evening (Dr. Gregg saw the man), and we came to the conclusion that, as there was then no urgent symptoms about the man, we would defer interfering until the morning.  Ordered him a little wine, as he was weak after the journey.  Next morning we found him nearly in the same state as previous evening: slept fairly through the night; called for the vessel to pass water, but did not attempt to get up; complains of no pain in head.  On protruding tongue it is slightly pointed to right side, and there is slight paralysis of facial muscles.  On being asked to write his name did so, but wrote a wrong Christian name; and on being asked to write the name over again he could not do so.  He also failed to spell numbers, but put down the figures, and each attempt differed from the former one, adding an 0.  With the concurrence of my colleagues and Dr. Gregg, it was determined that I should relieve the brain of the pressure under which it was suffering.  I therefore enlarged the original wound, and made another at right angles across, thereby exposing a depressed comminuted fracture of the skull quite cupped, slaped, and showing the opening through which the probe passes into the abscess of the brain.  I did not require to use the trephine, with the forceps removed seven pieces of bone, leaving a bared surface of dura mater about an inch in diameter, with a small opening through which some healthy pus flowed.  After the operation he

appeared to be still more relieved, and did not speak quite as thick as before. The edges of the wound were lightly brought together, and a pad wet in cold water laid over all. On the next day the matter came quite freely from the head, but there was some involuntary twitches of left arm. On the fourth day after the operation, I slightly enlarged the opening in the dura mater, and passed in a drainage tube, which acted very well by keeping him on the wounded side. He slept well that night, and next day's report is :—Pulse 84, stronger, quite regular ; respiration natural ; passes water well, and in good quantity and clean, and comes out of mouth straiter ; facial paralysis less ; takes his nourishment, and attempts to read the card over his bed. Seeing him attempt to read, I asked him to read the title page of the Life of St. Vincent de Paul ; he articulated the word Vincent, but could not articulate Paul, and grew quite confused at not being able to do so. He knew it, but could not say it. I tested him with other words, such as strength, sticking plaster, &c., and he failed in repeating those words also. As the attempt appeared to distress him a good deal, I did not test him in that way again. On the 28th, seven days after the operation, on going to his bedside, I found that he could not reach out his right hand to me, and there was great stupor in his face. He answered any questions put to him in a most indistinct manner. Matter still flowing freely through the opening in the dura mater, and quite healthy. His pulse varying from 64 to 70, feeble ; the power of deglutition rapidly failing ; bowels acting involuntarily, and bladder obliged to be emptied at intervals. He could be roused, and then the jerkings of right arm were very great. He continued in this state until the 30th, nine days after operation, when he died. I may add that there was very little pus for the last two days of his life. At the *post mortem* I found that the fracture extended from the parietal to the frontal bone ; that the left anterior lobe of the brain was one huge abscess ; that there was considerable effusion into ventricles and into the upper part of the membrane of the cord.

*Cases of Diphtheria, with Observations.* By D. C. O'CONNOR, M.D., Professor Queen's College, Cork.—Read before the Society Dec. 10th, 1868.

ALTHOUGH the subject of diphtheria has been brought before the society more than once, and especially in an able paper by Dr. Cummins, which, without flattery, I would pronounce to be the best condensation of medical opinion on this disease which I have read ; still, owing to its great interest, and because some new and important facts have recently come under my notice, I shall lay them before the society,

with some observations, particularly directed to the mode of propagation and the occasional difficulty of diagnosis of this disease.

Though scarcely any one doubts that diphtheria is contagious, there are peculiarities in the manner in which it spreads which distinguish it from every other epidemic disease. If it seize on a member of a family it spreads to the other residents of the house with a certainty not observed in the worst typhus. It also remains longer in the house, and appears to be little affected by its ventilation. It may be carried from one house to another, remote or near, by persons in contact with the patient. Still it does not appear to affect the atmosphere of the neighbourhood generally, as the houses in which it occurred are remote from each other, and, in my experience, not situate in the districts of the city where other contagious diseases are most virulent. In illustration of these views I will call attention to a few facts. A child came from Dublin to a boarding school in the neighbourhood of this city. On the day after her arrival she was suffering from sore throat, which she said other members of her family had laboured under before she left home. I saw her two days after, and recognized the diphtheritic exudation on the tonsils, and had her removed at once to the hospital. Although she only slept two nights in the general dormitory, five other children became affected with the disease in a few days. A child who was subject to slight attacks of fever from gastric derangement, when recovering from one of these, was observed to have the tonsils swollen ; and on looking into the throat I found the tonsils and pharynx covered with the peculiar exudation. The child recovered, but in a month after a younger brother got an attack of tonsilitis, to which he was subject. He appeared to be getting well by the ordinary treatment, when suddenly the exudation appeared first on the tonsils, and passing to the pharynx, and finally to the larynx, the child was suffocated. It may be stated that in the first of these two cases I witnessed the rare fact of a recurrence of the disease three times in a milder form. One of the servants in attendance, and the aunt of the children, suffered for months from inflammation of the pharynx, though without exudation, which I believed to be the modified effect of the poisons. Without multiplying facts I shall read two letters which give as striking proofs as any on record— the first of its deportati on to remote localities, the second of it concentrated virulence within one family. The first is from Dr. Hadden, of Skibbereen, a member of whose family I had seen in this affection. After stating that a connexion of his was governor of a school in Dublin, he goes on to say :—" In the early part of December, 1865, a tutor and a pupil in the school got sore throat and died. Several of the boys got slight sore throat, and amongst these a lad named W——, from this town, got it, and came home. My son, twelve years old, spent the day after his return with him, and in a few days showed symptoms of

diphtheria. The father of the boy W—— at the same time got slight sore throat, which continued for months, attended with great debility. My sister having visited the school in Dublin, was taken ill and died. Her six children got it, and two died." In this painful record he further states that his two daughters, having attended their aunt, got slight sore throats, and when they came home communicated the disease to one of his children, who died; and another relative came from the same house in Dublin slightly affected with sore throat, but soon after her arrival her sister imbibed the disease and died. Other members of the family suffered, but in a slighter degree. The second letter is from Dr. Tuckey, of Bantry :—" On May 19th I was called to attend Miss ——. She complained of slight sore throat, which she said she would have thought nothing of but that her mother had died a week previously of sore throat, after only four days' illness. The throat presented no unusual appearance. On my second visit, after two days, I found the characteristic appearance of diphtheria well marked. I used strong solution of nitrate of silver freely. She complained of some pain whenever the bowels were moved, which, she said, proceeded from piles; but on examination I found a sore of a peculiar character at the side of the anus—a patch about the size of a penny, denuded of cuticle, dark and sloughy-looking. Around this was some hardness and swelling, with an erysipelatous blush. A few similar sores were scattered on the back and thighs, but all of them much smaller. The sore at the anus was quite external; its nearest edge being distant nearly an inch. The disease in the throat continued to spread. The palate and both sides of the pharynx became affected, but the larynx, as indicated by the voice, never implicated. The strength continued good, and she took a fair amount of nutriment, with a liberal allowance of wine. On the 30th the throat was much better, though some difficulty of swallowing still continued. The sore gradually healed, and in about four weeks she was convalescent, though still weak and suffering from occasional palpitation of the heart. In about a fortnight, on calling in to see her, she complained of some difficulty of swallowing, and a slight feeling of numbness in her hands. The paralytic symptoms increased rapidly, and she died in about ten days. Her death was preceded for two days by complete loss of voice. Her death would appear to be caused by paralysis of the muscles of respiration and of the heart. During the time Miss —— was ill, her father and sister were attacked with diphtheritic sore throat, and both recovered after an illness of about ten days. June 14th, while in attendance on Miss ——, her brother, a healthy young man, twenty-three years of age, complained to me of having a sore near the anus, as he thought, from riding a horse barebacked. On examination I found the parts in precisely the same condition as in his sister's case. Both sides of the anus were engaged,

and the sore extended to the buttock. There were also several smaller ones on the back and thighs. Each consisted of a central black slough, the cuticle surrounding it being raised into a vesicle containing serum, invested with an areola of erysipelatous inflammation. These were of various sizes, from the size of a sixpence to a crown. He did not complain of much pain, and did not feel very ill; had a fair appetite; pulse 120; no sore throat. A few additional sores made their appearance at intervals, and one large one on the shoulder, so that I had an opportunity of observing their progress from their commencement. Each appeared at first like a small pimple or boil, with a central slough, which gradually enlarged and assumed the appearance described above; and all, after the slough had separated, gradually healed, so that in about four weeks all had cicatrized. I examined the throat repeatedly, but without finding any disease there, and he never had any difficulty of swallowing. On visiting, July 22nd, I found him suffering from paralytic symptoms; both hands and legs affected; his voice nasal and indistinct, but no difficulty of swallowing; pulse 100, and easily compressed, and heart's action violent. The paralysis of the limbs increased from day to day; the voice became more indistinct. He began to experience difficulty in deglutition; each attempt at swallowing bringing a violent paroxysm of impending suffocation, during which the efforts to cough were most distressing and peculiar, from being unable to close the rima glottidis. All the symptoms grew rapidly worse; his voice was quite lost, and he died on the 30th. From first to last his throat never showed any symptoms of disease. The peculiar sores and the paralysis gradually increasing until it implicated the whole muscular system, and finally producing death, were precisely similar to the case of Miss —— and his sister, who suffered from well-marked diphtheria. Dr. Swanton and Dr. Donovan, of Skibbereen, saw these cases frequently with me. I may mention that the house is in the neighbourhood of the sea, on elevated ground, and having no other house near it. Though every member of the family was attacked, all those in attendance escaped, and there was no other case in the neighbourhood." All the peculiarities to which I have referred as to the mode of reproduction of this disease have been forcibly illustrated in the cases which I have read. The great difference which we find in the characters of the several zymotic diseases may be expected if we believe that these are the result of sporules or animalcules, developed in the body, and thence transmitted to infect others at a distance. It is natural to expect that in these low forms of existence there should be differences as to the time of incubation, or the circumstances favourable to their growths, whether within or external to the body; and that thus some diseases are purely infectious, others infectious and contagious. Of the latter some may be contagious at shorter distances than others; some may be transmitted rapidly, others

slowly, through the atmosphere. Generally, it would be more profitable to note these peculiarities than debating about the existence of contagion because of its dissimilarity in different diseases. It will be also learned from these cases how difficult diagnosis becomes at times. All diseases have their maximum and minimum of severity; and in the latter we sometimes only know that a disease had existed when we see its secondary results, which may be as dangerous as if the original affection was of the most marked character, such as the anasarca in scarlatina, paralysis after diphtheria, and secondary syphilis where the primary symptoms were unnoticed. As this disease affects all the blood, it does not follow that it should invariably show its effects on the tonsils in the first instance, which would explain the different forms it assumed in Dr. Tuckey's cases, and would lead us to suspect that a great number of cases reported as idiopathic croup are but diphtheria with the local symptoms developed primarily in the larynx and trachea instead of the pharynx and tonsils. It is singular that the paralysis which forms so leading and dangerous a symptom of the disease in the cases I have related was unnoticed or did not exist when the diphtheria first became the object of special attention, and is not even now referred to in many excellent works on this subject. For this reason I will crave your indulgence while I read for you a statement of his own case, sent to me by a patient and friend of mine, in which every phase of this disease, from its insidious encroachments to the final attack of general paralysis, is described with an accuracy and clearness which could not be surpassed by any professional writer. It would be well for medical science if we oftener availed of the means of elucidating disease when we meet equally trustworthy and intelligent patients. The writer is the Very Rev. Canon Sheehan, of Bantry, whose recovery was as much a matter of surprise as of pleasure to his many friends. As far as this happy result was due to medical skill, the merit belongs to the unceasing care of Drs. Tuckey and Swanton, who watched the case through all its stages :—

"BANTRY, *March 9th*, 1868.

"The illness from which I am now slowly recovering has endured, under various forms, since early in November of the last year. I first experienced a very slight soreness of the throat, which caused a little pain in swallowing. The inconvenience was so small that I did not speak of it. On my return home in the evening I was attacked. I thought the soreness was the result of cold, which I expected to pass speedily away. I dined as usual, and did not experience sickness of any kind. Before going to bed I found the difficulty of swallowing to increase so much that I put a warm wrapping round my throat, thinking such simple remedy would be sufficient. I had been in bed only a short time when my feet became intensely cold and my head as inconveniently

hot. I spent a sleepless night, and remained in bed all next day, the soreness of the throat and the consequent difficulty of swallowing constantly increasing.

"It was on a Wednesday I first complained, and the pain went on constantly increasing until Saturday, when I sent for a physician. Before doing so I perceived, on looking at my throat in a mirror, that the tonsils and the parts adjacent were covered over with a white coating which I thought to be an abscess. The possibility of my having diphtheria never occurred to me. I was out of bed and down stairs a part of every day from Wednesday till Sunday, both included. I took very little nourishment, and the fluids which I tried to swallow caused me intense pain whilst passing downwards. I did not sleep at all, and the secretions were either suppressed altogether or very much diminished. The symptoms went on, constantly aggravated, from the 12th of November to 21st. For two or three days before this latter date respiration became very difficult, and was attended with a rattling noise in the throat, so bad as to be heard at a considerable distance from the room where I lay. My voice, too, became husky and suppressed, and utterance was difficult and hardly intelligible. I continued in this state for some hours, when I fell asleep, and awoke after an hour or two raving and violent. This subsided after a short time, and I felt that I could swallow with less difficulty. During the worst periods of my illness the only sustenance I could take was milk, and of this I partook largely. By very slow degrees I got better, and the expectoration, which had been copious from the beginning, still continued undiminished. After some days of great lassitude I was well enough to get up, and soon left my room for a neighbouring apartment, where I spent the days. I was able to swallow a few oysters and minute morsels of animal food without acute pain, but yet with much difficulty. All liquids had a great tendency to pass out through the nostrils, and frequently did so escape. The bowels throughout were obstinate, and never acted except coerced by medicine. Whilst in this state of slow and doubtful recovery, I was seized one night with a sudden chill and trembling. I spent a great part of the night coughing, and the expectoration was more than usually copious. I felt a wheezing in the bronchial tubes, which made respiration at times very difficult. I had to take to bed once more, and give up the use of the little animal food which I had been previously in the habit of taking. This condition lasted for several days, and I was debilitated to the very last degree. On Christmas eve I fainted, and felt as if my end was approaching. However, I rallied once more, the cough became less troublesome, the expectoration diminished, and I became decidedly better. On 7th January I was well enough to be removed from my own house to Bantry, and I experienced much benefit from the change of air; but a new and most distressing phase of the disease was beginning to exhibit

itself ; I found gradually coming upon me a sense of numbness in the hands and feet, succeeded by the very disagreeable sensation popularly known as pins and needles. This went on increasing rapidly, and my feet began perceptibly to swell. Great weakness of the muscles of the arms and legs rendered walking or grasping anything very nearly impossible. I lost in a great measure the power of regulating the movements of my limbs, so that if I stretched out my hand to take any-thing, it was wide of the object I intended to lay hold of. A certain contraction of the muscles of the arms gave me the sensation of being pinioned. I could not raise my hands higher than my shoulders. There was no perceptible swelling in my hands, but it needed the evidence of my eyes to persuade me they were not of enormous size and filled with hard circular protuberances. The tension of the skin of both hands and feet was so great that I frequently felt as if it would burst. During this latter stage of the disease my appetite continued very good, and the digestive organs were quite healthy. My rest too was generally unbroken, but sometimes I was kept awake by nervous twitchings in my feet and hands, and uncontrollable desire to change their position from one part of the bed to another. In going up stairs or into a vehicle, it was necessary some attendant should raise my feet one by one, my own strength not being sufficient to lift both. My hands were so useless that I was incapable of performing the smallest offices for myself. Now, happily, these distressing conditions have been very much mitigated. I can perform all that appertains to dressing and undressing without any assistance, and I can walk, helped by a stick, or leaning on a companion, for a considerable distance. My feet are still much swollen, especially at night, but by morning they resume their normal dimensions."

From this period the improvement was gradual, but certain, till perfect recovery. The treatment in varying symptoms of the early stages of the disease was such as is generally adopted. In the latter, more rare affection, paralysis, he got a warm bath every night, followed by a few grains of James's powder, united with blue pill every alternate night, and a sixteenth of a grain of strychnine three times a day.

A question might be raised as to whether the paralysis in these cases is the result of the action of the nervous centres, or on the peripheral nerves. The latter appears to me the more correct explanation of the phenomena ; otherwise, the paralysis would be greatest when the poison is in fullest force ; whereas, it does not appear for weeks, sometimes months after. It is more likely that the poison is slow in its elimination from the body, like syphilis, and affects the peripheral nerves on its passage to the cutaneous surface. The length of time which it lingers in the blood, would also afford an explanation of the length of time it lingers in a family, communicating its deadly virulence from persons who were supposed themselves to be long free from the disease.

*Selections from the Dutch Archives of Medical and Physical Science* ("*Nederlandsch Archief voor Genees en Natuurkunde*"), Vol. iii., Parts 2 and 3, and Vol. iv., Parts 2 and 3.  Utrecht, 1867–68.  Translated by WILLIAM DANIEL MOORE, M.D., Dub. et Cantab.; M.R.I.A., L.K.Q.C.P.I.;  Honorary  Fellow  of  the  Swedish  Society  of Physicians, of the Norwegian Medical Society, and of the Royal Medical Society of Copenhagen; Secretary, for Sweden, Norway, and Denmark, to the Epidemiological Society of London.

*On General Progressive Paralysis.*  By Dr. C. K. HOFFMANN.—In the autopsies of persons dead of general paralysis, which the author had the opportunity of performing, he found at one time great thickening of the walls of the vessels (in the white substance too), with almost complete integrity of the ganglionic cells; at another, especially when the dementia was strongly marked, an exquisitely distinct fatty and pigmentary degeneration of the ganglionic cells, and retrogressive metamorphosis, combined with thickening of the walls of the vessels. At the same time there was very well marked fatty and pigmentary degeneration of the ganglionic cells of the thalamus opticus and the corpus striatum.

The condition of the spinal cord in general progressive paralysis is extremely interesting.  After Westphal had previously pointed out that, in some who had died of general paralysis (at least in that form of the disease in which for years severe excentric pains had preceded the lesions of motility of the inferior extremities, and which exhibited a character analogous to that of tabes dorsalis), an affection of the spinal cord, consisting in a degeneration of the posterior columns, also exists, he has again, latterly, directed attention to this fact (*Virchow's Archiv*, 1867. Bd. xxxix., pp. 90, 350, 592), and has, after long continued investigation, arrived at the result that, not only in the variety referred to, but in *all* patients suffering from general paralysis, an affection of the spinal cord occurs.  He has demonstrated a degeneration not only of the posterior columns, but also of the lateral columns of the spinal cord, and has been able to trace this pathologico-anatomical change even into the medulla oblongata and the pons.

Especially the latest communications of Westphal induced Hoffmann to repeat his investigations.  Only one case of general paralysis occurred to him after this time, and in it he was enabled completely to confirm the results of Westphal's researches: both in the fresh state, and after treatment with bichromate of potash, numerous amylaceous corpuscles, granular cells, and granular masses, were seen in the posterior columns, while the investigation of sections of hardened preparations exhibited

very distinctly loss of nerve-elements. Moreover, he had an opportunity of examining the spinal cord of a person who had died of general paralysis, which was kept from previous dissections in a solution of chromic acid, and in this instance, too, he found Westphal's communications respecting degeneration in the posterior, and partly also in the lateral columns, completely confirmed (*Nederl. Tijdsch. v. geneeskunde.* D. IV., afd. 2. bl. 126). From the *Nederlandsch Archief voor Genees en Natuurkunde.* D. III., 3ᵉ Afd. 1868, p. 531.

*On Degeneration of the Ganglionic Cells of the Brain.* By Dr. C. K. HOFFMANN.—In the cortical cerebral substance of a patient labouring under chronic mania, melancholia, but especially dementia, the author saw shining, corrugated, more or less triangular corpuscles, measuring from 0·009‴ to 0·015‴, which were nothing but the last term of a series of pathologico-anatomical changes of the ganglionic cells. He describes the process as follows :—

" After the ganglionic cell was first almost entirely permeated with fat and pigment molecules (the nucleus and nucleolus, however, always remaining intact, and the former appearing only a little compressed), slow resorption of these pigment and fat molecules seemed to take place. Meanwhile, the protoplasm which remained contracted more and more around the nucleus, and diminished both the number and the extent of the protoplasm outrunners ; finally, it was scarcely possible any longer to distinguish a layer of protoplasm around the nucleus, except where the greatly attenuated outrunners emerged. The nucleus now began to assume a more pyriform shape, and acquired a glittering exterior. The nerve filament, which with normal ganglionic cells is to be preserved only with the most extreme care, seemed in this instance to have kept much longer. At least, I often found in ganglionic cells which had become very thin and slender, and had lost nearly all the protoplasm outrunners, the nerve outrunner still very well preserved.

" The form of the nucleus now became gradually more and more triangular ; the protoplasm outrunners, reduced to one or two extremely slight filaments, were at length completely lost ; the protoplasm itself entirely disappeared ; the nucleolus, which seemed longest to resist the pathological change, was at last seen with difficulty, under the strongest magnifying power, as an extremely small shining point, and finally totally vanished—and now we found the above described triangular corpuscles as the ultimate link in the chain of the process of retrogressive metamorphosis. Even where all the protoplasm had disappeared, and the nucleus was shrivelled, but the nucleolus was still preserved, I sometimes found a nerve-filament hanging to the nucleus."

In examining the normal structure of the cortical substance of the brain, the author sometimes found, in young animals (rabbits), isolated

ganglionic cells, on which the nerve-outrunner was still very distinctly perceptible. With a strong magnifying power, and close examination, he could trace the nerve-outrunner through the protoplasm, and the nucleus to the nucleolus, so that even in the ganglionic cells of the central organs (of rabbits at least), the nerve-outrunner appears to take its origin from the nucleolus, just as Beale and Arnold have demonstrated with respect to the ganglionic cells of the sympathetic nerve of the frog. The farther the degenerative process is advanced the more atrophied is the cortical substance, and the paler is its colour. (*Nederl. Tijdsch v. geeneeskunde*. D. IV., afd. 2, bl. 111.) *Nederlandsch Archief.* D. III., 3$^e$ afl. Utrecht, 1868, p. 529.

*Investigations with respect to Aqua Laurocerasi*. By J. Broeker, Apothecary to the Forces.—This paper contains statements, from various authors and pharmacopeias, relating to Laurel water; and investigations by the writer himself. In the latter he proposed to answer the question: What influence the time of collecting the leaves may have on the amount of prussic acid present. In order to answer this question, he collected, every month during a whole year, fresh leaves of the Prunus Laurocerasus, and each time prepared with them Aqua Laurocerasi, according to the directions of the "Netherland's Pharmacopeia." The results of this series of experiments are as follow :—

| Months. | | Quantity of Cyanide of Silver from one ounce. | |
|---|---|---|---|
| | | Milligrammes. | Grains. (±) |
| November, 1864 | 6 drs. leaves of laurocerasus, *cut fine*, digested for 24 hours, with 12 drs. of water, at 59° F., 5 drs. being distilled from the same in a glass retort. | 250 | 3¾ |
| December, ,, | | 170 | 2⅔ |
| January, 1865 | | 170 | 2⅔ |
| February, ,, | | 120 | 1⅞ |
| March, ,, | | 220 | 3⅓ |
| April, ,, | | 170 | 2⅔ |
| May, ,, | | 200 | 3⅓ |
| June, ,, | | 250 | 3⅞ |
| July, ,, | | 300 | 5 |
| August, ,, | | 240 | 4⅔ |
| September, ,, | | 280 | 4⅓ |
| October, ,, | | | |

From these results it appears that in 1865, a year in which the summer was very warm, and in which vegetable growth was extremely early and abundant, the leaves plucked in July yielded the largest quantity of cyanide of silver in the laurel water. In the following year, the October leaves seemed to yield the strongest water. Of course the

nature of the soil and of the weather may always modify these results. As to the mode of preparation, experience showed that the strongest water is obtained by cutting the leaves small, and thereupon distilling directly. To distil from the leaves whole is a quicker method, which usually affords a water which still is stronger than the Netherlands Pharmacopiea requires.

*Pemphigus in the Form of an Intermittent Fever.* By Dr. VAN DIEREN.—On the 19th of July I was sent for to see the child of L. S., farmer, aged two years, which had already been three days ill. I found a considerable elevation of temperature (104° F.), quickness of pulse (120°) and dryness of the tongue. The child was raving, and had, from time to time, convulsive twitchings in the arms and legs. But what struck me most were vesicles on the face as large as beans, exactly resembling vesications produced by a burn, and visible on no other part of the body. My first inquiry was whether the child had burned itself. But the mother assured me that nothing of the kind had happened, as the child had already been for three days confined to bed, and the vesicles had not appeared until the middle of the day on which I was sent for. The child was, moreover, as she told me, not annoyed by the erysipelas, though the spasms, which she had observed also on the previous day, distressed her. On further inquiry, I found that the child was more lively in the morning, and that she had then an inclination to play, though not as formerly. Her appetite was quite gone, and her bowels regular. She was always worse in the afternoon—drank much; and these symptoms had gone on increasing from day to day. The child, the youngest of five healthy children, appeared in good condition, and up to the present time had always been in good health. The father and mother are free from syphilis. I therefore diagnosed pemphigus, and to this cutaneous disease I ascribed the feverish symptoms. The vesicles were filled with clear fluid, and the surrounding red areola was distinctly perceptible. They were scattered, to the number of eight, over the face, and two of these were half on the hairy part of the forehead. I prescribed cold to the head, rest, and a mixture with nitre. On the following morning I visited the little patient, and found a complete change: the child was in good spirits, and had taken a little milk; the temperature was normal, as was the pulse, and the tongue was moist. The vesicles had all burst, and some were already dried—some had been scratched by the child, so that the red and moist skin, stripped of its epidermis, was still visible. In the afternoon I was again summoned, as the child was still worse than on the previous days. I then found the temperature once more elevated, the pulse accelerated, convulsions and delirium had supervened, but there were now no pemphigus-vesicles on the face, though there were some of the same

size and form on the backs of the hands and of the forearms. The affection followed the same course as on the preceding day. On the following morning the temperature was again normal ; some vesicles had burst, most of them, however, were still present. The distinct intermissions in the elevated temperature led me to try the sulphate of quinia. Two grains were taken by the child before midday, and when I returned in the afternoon I found her free from fever—nor from that time were any fresh pemphigus-vesicles seen. The contents of those which still remained were turbid ; the others had dried into a crust. On the following morning, the 21st of July, the child was perfectly well, having once more taken the same dose of quinia, and she was soon restored to her usual state.

Non-syphilitic pemphigus is a rare disease, especially in young children, and its course is not always equally favourable. Writers have distinguished an acute and a chronic pemphigus. The former is the more favourable, the latter is often fatal. Acute pemphigus, also called the benign, occurs still more rarely than chronic pemphigus. It is always accompanied by fever, at one time slighter, at another more severe. The disease usually lasts from two to four weeks, accordingly as the eruptions of vesicles are more or less numerous, and it almost always terminates spontaneously in recovery. The chronic variety commences in general without any remarkable concomitant symptoms, and, while sometimes for months together one formation of vesicle follows another, it is only at the end of the disease that fever supervenes, by which the gradual exhaustion and approaching death are accelerated. Such is the ordinary course of pemphigus. Cases of an acute nature have lately been described by Mosler and Steffen, and also by Thomas in the *Archiv für Heilkunde*, (4 *Heft*, 9 *Jahrgang*, 1868). The case observed by me differs somewhat from the ordinary course, inasmuch as it exhibited a distinct type of complicated intermittent fever, and as recovery rapidly followed the administration of quinia. In one point of view, however, I found a striking analogy, namely, the elevated temperature, which was observed also by the above-named writers at the time of the eruption of the vesicles.

*Emphysema Palpebrarum.* By Dr. van Dieren.—In September last, G. V. S., a peasant, aged twenty-five, got a blow of a neighbour's fist on the nose, which was followed by formidable epistaxis. When the bleeding ceased and he blew his nose, he observed that his left eyelids suddenly swelled up and that he could no longer see. He came at once in distress to ask my assistance, crying out that he was struck blind. I found great swelling of the lids of the left eye, without discolouration, the swelling extending to the temporal region. The lids were extremely tense, so that I could with difficulty see anything of the globe of the eye. Pressure

gave rise to not the slightest pain; only at the side of the nose, close to the inner angles of the eye, was there a sensitive point. Pressing with the tops of the two first fingers over the whole swelling, I could distinctly hear a crepitation, such as we usually perceive in a piece of lung, and when I pressed in the direction of the nose, I was able to cause the disappearance of the swelling. When the patient blew his nose the lids swelled up with the same rapidity. I could in this way easily satisfy myself that the globe had not suffered.

That I had here to do with an accumulation of air in the subcutaneous connective tissue, is evident; but in what way in the compression of the nasal cavity, the air penetrated was not clearly established. Fracture of one of the bony walls of the nose, in favour of which were indeed only the painful point and the occurrence of the epistaxis, appears to me plausible. The treatment consisted simply in the application of a compress and a caution not to blow the nose. As a " placebo " I prescribed some Goulard lotion.

It appears that literature is not rich in such cases. Robert Taylor,[1] at least, asserts that these occur so rarely, that even oculists of great experience have never seen them. He therefore communicates a case; the exciting cause was a thrust with a finger, which one young person inflicted on another in the inner angle of the right eye. Except the epistaxis the symptoms were the same as in the case observed by me, accumulation of air on blowing the nose, and disappearance of air on pressure. For the encouragement of the young physician, he adds, that the diagnosis is extremely easy, and that *the accumulation of air occurs simply through a traumatic rupture of the lachrymal sac.* The exciting cause, the crepitation of the air, and the ease with which the eyelids swell on blowing the nose, are to him satisfactory proofs thereof. Laurence, however, does not agree with Taylor on this point, for he gives in the same journal a similar case which occurred in his practice, but he arrives at a different conclusion. The case was that of a drunken bricklayer, who, through a fall, got a small cutaneous wound at the root of the nose, after which the left eyelid swelled up on blowing the nose. " *There is no doubt,*" says Laurence, *that the accumulation of air in the subcutaneous connective tissue of the eyelids was caused by a fracture of one of the nasal walls.*"

We thus find two different causes assigned for one and the same effect. Without wishing to give any decision on this point, I believe that we cannot be perfectly sure of the correctness of either explanation. It is, however, fortunate for the patients, that this diagnostic uncertainty has no essential influence on the treatment, for both Taylor's and Laurence's patients recovered under the same mode of treatment as mine.

[1] Ophthalmic Review, April 11, 1867.

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## PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XIV.—*An Inquiry into the Influence of Libidinous Excess on the Causation of Locomotor Ataxy or Tabes Dorsalis.* By THOMAS LAYCOCK, M.D., &c., &c.; Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology and Mental Diseases in the University of Edinburgh.

IT is not improbable that too much importance is sometimes given to sexual excesses as a cause of the neuroses classed under the term tabes dorsalis, to the exclusion of equally important and perhaps more direct causes; but I think there are signs of a tendency to the other extreme of opinion, more especially with regard to locomotor ataxy, and a danger of thus overlooking a very important practical point. Much depends upon the notion people have of what constitutes excess, which must be always relative, and whether it be looked upon as an exciting, or immediate, or a predisposing and remote cause. It is not uncommon to find diseases of the nervous system insidiously developed from some remote cause, as an injury to a nerve, and so with that under consideration. A great excess for a few days only, acting like a " shock," may manifest its consequences in the nervous system at a long distant

subsequent period. It is of importance to distinguish locomotor ataxy induced in this way from the spermatorrhea, nervousness, and nervous debility that result from solitary vice, since the sensory pudic nerves are differently excited. To this difference, indeed, may be attributed, in some instances at least, the differences in the results. In locomotor ataxy the degeneration seems to commence with the sensory ganglia and posterior roots of the spinal nerves, extending thence upwards; whereas in "nervous debility" the chief symptoms are manifested cerebrally. The following case is an illustration of the latter class:—

CASE I.—*Tabes Dorsalis of the Old Writers.* Reported by Mr. J. H. CROOM. J. M'D., aged twenty-five, a pipe-maker, admitted to Ward 3, Edinburgh Royal Infirmary, November 15, 1867, under care of Dr. Laycock.

*History.*—When about twelve years old he became addicted to masturbation, and continued the practice for eleven years—*i.e.*, until about two years ago, when he gave it up. Since then he has been subject to nocturnal emissions at the rate of three, four, or five times a week; often, however, with intervals without any of a fortnight's duration. At first he practised masturbation (he says) from ten to twelve times daily, and continued to do so for two years, when he was seized with what he calls a weak fit, in which he was affected with temporary blindness, and was confined to bed for a day or two. He then reduced the number of times to twice daily, viz., night and morning. Except a severe attack of an acute disease in childhood, he has always been well and strong. Has been of intemperate habits, getting drunk as a rule every Saturday night, but has only been continuously "on the beer" twice for about a week each time. Has usually smoked from three to four ounces of tobacco per week. Has always had plenty of animal and other food. Has followed his employment of a pipe-maker until two months ago, when he found himself unable to work. On admission the intelligence of the patient was observed to be greatly impaired. His memory was defective and he could not carry on a sustained conversation for any length of time. He sleeps very little; has vertigo and headache, and he says he "feels as if there was a constant cloud over him." Complains of persistent dull pain in left hypochondrium, in the region of the heart, and in the forehead; and of constant pain and weakness in the loins. Is very nervous and easily frightened, and has fits of despondency. All his senses normal except vision,

which is impaired.   Expression of countenance anxious and vacant,
that of the eyes peculiar; the eyebrows meet, the pupils widely
dilated.     On   ophthalmoscopic   examination,   by   Mr.   Walker,
ophthalmic surgeon to the Infirmary, both of the nerves were
found to be in a state of atrophy.   The disk of the right ovoid in
form, and downwards and outwards in direction, that of the left
normal.   Patient is of middle height, thin, and very pallid, but not
anemic.   His manner is hesitating, and his gait unsteady, but he has
no neuralgic pains in legs.   He lies chiefly on his back.

Skin natural, lungs healthy, apex-beat of heart between sixth and
seventh rib; first sound slightly accentuated; appetite good; bowels
constipated.   He was treated at first with the bromide of potassium.
This soothed him at night for a few minutes after taking it, but no
longer.   The cold douche depressed him much.   A combination of
nux vomica and valerianate of iron seemed to be useful.   But after
treatment for forty days the patient became very restless and " un-
comfortable" in his mind—thought he should like to make the tour
of Scotland and sell pipes—and left the Hospital slightly relieved.

This case offers a group of neuroses (or functional nervous dis-
orders) for consideration which is by no means uncommon, although
the nerve-centres involved may be variously affected in different
individuals.   It has been attributed from time immemorial to
venereal   intemperance,   whether   associated   with   paraplegic
phenomena or not; and is distinctly described in the Hippocratic
writings under the term phthisis notias, *i.e.*, humid tabes or phthisis.
The symptoms there given closely correspond with those usually
attributed now-a-days to spermatorrhea.   Indeed, Dr. M. Good
states that the differential term " humid" was adopted expressly to
indicate that kind of decline (phthisis) which results from an
intemperate indulgence in libidinous pleasures, because the patient
had a frequent and involuntary secretion of a dilute and imperfect
seminal fluid.   Lommius, taking up the Hippocratic description,
termed it dorsal phthisis or decline (*tabes dorsalis*), from the weak-
ness in the back which the intemperate indulgence in question
caused.   It is to be noted, however, that all the older writers
mentioned spermatorrhea rather as a result of salacity, as it cer-
tainly is in cases of locomotor ataxy in the early stage, than a cause
of the neuroses, and do not refer to masturbation at all.   Nor is it
probable that this vice was more commonly practised than the
unnatural crimes so prevalent in ancient times.   Perhaps it is to
these latter the Greek writers refer when they remark that the

decline occurs in persons of "a salacious disposition," since they specially add—" or in those who are newly married, and have too largely indulged in conjugal pleasure."

In the case just detailed, except an unsteadiness in the legs, no affection of the lower extremities was noted. But in the kind termed progressive locomotor ataxy, in addition to vertigo, dimness of vision, strabismus, and the various symptoms attributed to spermatorrhea, there are illusive sensations and neuralgic pains in the back and legs, often extending to the arms, impotence, and a peculiar instability in walking. For a long period, and even yet, these and other affections of the lower extremities were attributed without distinction to spermatorrhea or sexual intemperance, and were also designated tabes dorsalis. Professor Romberg was the first (nearly thirty years ago) to differentiate the peculiarly unstable gait and its concomitants from ordinary paraplegia. Although he clearly described the head-symptoms, and most particularly the defects in vision and other sensory affections which accompany the ataxy, yet, finding the anatomical changes restricted to the spinal cord and to the posterior roots and columns in the dorsal region, he considered it to be a spinal disorder,—not, however, involving the cord as an instrument for the transmission of motor and sensory stimuli, but as a central organ and source of nervous power by which " the continuance and vigour of motion and sensation are secured, and a general stimulus for the entire organism is provided." To this diminution of power Romberg attributed the group of symptoms which he described under the old term *tabes dorsalis*, and the diminution of power to certain anatomical changes in the cord. M. Duchenne communicated a series of papers to the *Archives Gen. de Med.*, commencing with December, 1858, in which he described the affection described by Romberg as a new disease, evidently, and indeed confessedly in ignorance of Romberg's researches. But as Dr. Axenfeld pithily says in a letter in the *Archives* for Nov., 1863, p. 475, *deux noms, une chose*. Dr. A.'s account of the disease, in the same journal, for August and October, I may here say, is one of the best extant. The chief difference between the two inquirers is in the anatomy. Duchenne dwells more than Romberg upon the encephalic symptoms, and fixes upon the cerebellum as the seat of the disease. My impression is that both are right, except in so far as they deny or omit.

In what respects then does the old tabes dorsalis differ from the ataxic tabes? Anatomically in the progressive character of the

disease; in the former there is no progressive degeneration of the nerve tissues. In both there are head-symptoms, but it is in the onset of a progressive spinal degeneration with obscure head-symptoms that ataxy chiefly differs from the old tabes. And this is of the greatest practical importance, for the progress of the affection when once the spinal symptoms are established is so inevitable, however slow, that the diagnosis in the early stage is essential to successful treatment. Now this can hardly be established from the symptoms alone, and independently of a knowledge of the predisposing and exciting causes. Hence the value of the latter, and more especially in reference to sexual excesses. How shall we ascertain this fact? There can be little doubt that in the case just detailed early and inveterate masturbation, so plainly confessed, was a chief cause of the neuroses. Individuals differ so much, however, that some experience of the protean forms of the disorder, and of the evasions of patients, is needed to diagnose the affection when chiefly due to sexual excesses. Besides, etiologically, this is a relative term, for with this intemperance, as with intoxication, patients have not only peculiar ideas as to what is excess, but differ as to the extent they are affected by the same extent of indulgence. So that even when patients are candid, much caution is required in receiving their statements; but too often excess is concealed, and this especially when it is not only vicious but criminal. Again, difficulties in the way of etiological diagnosis are particularly experienced in those persons in whom mental disorders, like hypochondriasis and "low spirits," mask the other neuroses and turn attention from them. I think, however, the chief difficulty is in the important fact that venereal intemperance is so rarely followed at once by the symptoms, that the connexion between cause and effect is lost sight of, the effect being rather to predispose the nerve-centres to take on disease from the action of various and more immediately exciting causes, so that these are regarded as the causes and the other is forgotten or denied. The subjoined case illustrates this order of causation in progressive locomotor ataxy :—

Case II.—*Case of Progressive Locomotor Ataxy, first stage.* Reported by Mr. W. A. P. Jefferiss, Clin. Clerk. Alex. D., shoemaker, aged thirty, unmarried, admitted into Ward 1 of the Royal Edinburgh Infirmary, under care of Dr. Laycock, 26th January, 1868.

*History.*— Patient has had the diseases of childhood; he has been

a very healthy man, never having been a day off work from illness of any kind.    Prior to two years ago he was in the habit of taking spirits very freely, but since that date has been of very temperate habits.    About four years ago he contracted a gonórrhea, and had also what he termed syphilis, in the form of several hard indurated chancres on the glans penis.    They were very long in healing, resisting all treatment for nearly ten months.    The large scar left on the glans penis is of irregular form, and there is no induration. He had no sore throat, buboes, pains in the bones, or eruption on his body with the chancres, but he had *chordee for several weeks with the gonorrhea, and frequent seminal discharges.*    The glans penis is singularly large and broad, as is the whole organ.    He admits, but with some reluctance, that he has practised masturbation, and that he has indulged in libidinous excesses; not ascertained whether he be impotent.    Last spring, whilst working in a cold, damp, and ill-ventilated workshop, he was troubled with wandering pains in his back.    These continued for a few months, and then wholly ceased for about three months, when they began again with greater severity.    They were limited to the lumbar and iliac regions, more particularly on the right side.    After repeated local applica- tions, chiefly of amoniated camphor liniment, they greatly diminished in severity, but still continued to annoy him; when in addition he began to suffer from a loss of power over his legs, so that he could not stand unsupported, and was consequently obliged to give up work.    He says he could move his legs and feet with as much force as ever, provided he was sitting or lying, but on attempting to walk he had no control over his movements.    About two months ago he had medical advice, but getting no better after treatment and con- finement to bed for seven weeks, he came to the Infirmary.

*On Admission.*—He is a stout, muscular-looking man, with a heavy jaw, and anxious but intelligent expression.    With the ex- ception of weak vision, there was no defect in the special senses. Tactile sensibility was somewhat impaired in the lower extremities, and he complained of slight pain in the *right* iliac and lumbar regions. No headache; sleep good; memory and power of attention are both impaired.    On attempting to walk he loses control of his legs and stumbles, especially if his eyes be shut.    He says that he feels when walking as if a soft body was between the soles of his feet and the ground.    When lying in bed he can exercise perfect volitional control over his legs, which are well nourished and muscular.    His eyes were examined with the ophthalmoscope by Mr. Walker, who

noted optic neuritis in both eyes; more distinctly marked in the *left,* and the whole retina more injected than usual. The *right* is much the same as the left, but probably more advanced in the second stage of atrophy. Respiratory and cardiac organs healthy; tongue clean; appetite good; bowels constipated; urine normal. At first the secale cornutum was prescribed with no result. Although it was doubtful whether the man had had syphilis or not, the bichloride of mercury was subsequently conjoined, and the occipital region shaved and blistered. Under this treatment he rapidly improved for a while, so that he became able to stand and walk alone. On 17th March, being satisfied with his improved health, he left the Infirmary.

In this case there were such conditions operative on the sensory nerves of the glans penis which, by centripetal action, would induce morbid changes in the ganglia on the posterior roots, and in the posterior sensory columns. Such was the long strain on the *nervi erigentes* that induced the chordee; such also the long continued irritation of the large sensitive glans by the broad ulcer on it, and doubtless, the venereal gluttony might be rightly added. But all these are apt to be forgotten in the obvious and immediate exciting cause, viz., constant exposure of the legs to cold and damp. This exciting cause is so common that it is often noticed. Mr. Lockhart Clarke, in his able monograph on the disease in Vol. i. of *St. George's Hospital Reports*, observes " that in persons who are predisposed, almost anything that depresses the nervous power, especially of the spinal cord, may prove an exciting cause. . . . . Of all these a prolonged exposure to the combined operation of cold and damp is by far the most common, as it is probably the most certain in its effects." This fact being admitted it still remains to determine the special predisposing cause or causes, for precisely the same general exciting causes induce true paraplegia and other forms of spinal disease, and the question is left unsolved—what is that special condition of the nerve-centres (both cerebral and spinal) which so specially predisposes as to render cold available to the production of this special form of disease of the cord and brain?

The same remark applies to the alleged influence of age, sex, and heredity, which latter Trousseau dwells upon. All observers concur in stating that the disease specially affects males aged from twenty to fifty. Now this is the period of life during which the virile organs are most active; nor do the three cases mentioned by Friedreich, aged fifteen, sixteen, and eighteen respectively, invalidate

the general fact.    Yet none attempt to show why males of this age are so highly predisposed, nor why females are comparatively exempt.    The facts would lead to the conclusion that the disease is in some relation to male sexual function; yet the majority of observers repudiate the notion.    Mr. L. Clarke, it is true, speaks of onanism as an exciting cause; and Trousseau says, without going further, " In nearly half the cases which have come under my observation there had been spermatorrhea.    The seminal losses were either diurnal or nocturnal.  .  .  .  .  In Lallemand's work on spermatorrhea you will find several cases of paraplegia, which were certainly cases of locomotor ataxy."    Dr. C. Bland Radcliffe also observes—" In some cases sexual excess would seem to figure as a cause, but not in others; not perhaps by any means in the majority."—(*Reynolds's System of Medicine*, Vol. ii., p. 350.)  Yet, of the two cases Dr. R. relates (both in sailors), he remarks of the one—" Sexually, the state may be spoken of as approaching to spermatorrhea,"—and of the other—" For the last two years the sexual inclinations have been much damped, but before this time, from what he says, he appears to have been little better than a very satyr."    Doubtless it is from conclusions thus drawn that Mr. Roberts affirms, in common with others, " that venereal excesses— the acknowledged productive cause of tabes dorsalis—seem to have no special relation to the etiology of locomotor ataxia;" and that Dr. C. B. Radcliffe, in common with Trousseau and others, concludes: " In fact, it is not possible to refer locomotor ataxy to any special cause," and particularly objects to the term tabes dorsalis being used to designate it, because implying its sexual origin.  Now I think justice has not been done in this respect, as in others, to Romberg.    He observes—" Two circumstances that have been shown with certainty to predispose to tabes dorsalis are the male sex, and the period between the thirtieth and fiftieth year of life. Scarcely one-eighth of the cases are females.    The loss of semen has always been looked upon as one of the most fruitful sources of the complaint; but this in itself does not appear to be a matter of much consequence as influencing the disease, as patients who have been labouring under spermatorrhea for a series of years are much more liable to hypochondriasis and cerebral affection than to tabes dorsalis.    *But when combined with hyperstimulation of the nerves, to which sensual abuses give rise*, it not unfrequently favours the origin and encourages the development of the disease after it has commenced.    When the strength is much taxed by continued standing

in a bent posture, by forced marches, and the catarrhal influences of wet bivouacs, followed by drunkenness and debauchery, as is so often the case in campaigns, the malady is rife; this is the reason why tabes dorsalis was so frequent during the first decade following the great wars of the present century."—(*Dr. Sieveking's Trans. for the Sydenham Society*, Vol. ii., p. 400.)  In none of the monographs that I have read is there so accurate an account of the order of causation as this.  The fact I have italicized is particularly worthy of notice.  And this points to the conclusion, that to determine the exact relation of tabes dorsalis to sexual excesses, much more careful observation is needed as to the particular kind of excess, as to the date thereof, and as to the nerve-centres and nerves involved.  In the true sexual affection the first stage of the disease is sometimes so exclusively neuralgic that only very close observation can discover ataxy.  Now it is in this stage that close inquiry reveals the effects of *hyperstimulation* of the erotic nerves (if I may be allowed so to designate those which subserve to sexual pleasure), such as results from very frequently repeated, perhaps, bridal congress, and not merely from masturbation.  I have a case now under observation in which the neuralgia is the prominent condition and the ataxia is only discoverable on careful observation and inquiry.

What is the relation of the alleged cause to that most important point in the disease, viz.: the insiduous yet progressive degeneration of the nerves and nerve-centres involved?  Now there are cases of locomotor ataxy in which there is not only no progressive degeneration, but few, if any, sensory neuroses.  In these, the ataxy is presented in its simplest form and as a neurosis only, and amounts mainly to a defective co-ordination of those muscles of the back whereby the legs, vertebral column, and pelvis are rendered combinedly fit for locomotion, so that when these muscles are not needed, as in lying or sitting, the patient has complete volitional control over his legs.  Experience teaches that any long exercise of a particular group of muscles, such as are strained when working in a stooping posture, would so far act on the corresponding sensorial or motorial centres, that a predisponent condition might be set up such as to render cold and damp efficacious in exciting local disorder, without necessarily inducing progressive neuralgia or cerebro-mental neuroses, provided no venereal excesses have been committed.  It is precisely to this class of cases that Dr. Roberts, of Manchester, refers when he remarks (in *Med. Mirror*, for 1866), " Unsteadiness of gait, from a want of power to co-ordinate the muscular contractions

of the lower limbs, is a frequent complaint in this district; but I have not observed that such cases tend to a progressive involvement of the entire muscular system, and a gradual abolition or perversion of cutaneous sensibility, nor have they been preceded or accompanied by strabismus or defective vision. The condition to which I refer occurs in persons whose occupation exposes them to excessive wet or cold—miners, well-sinkers, excavators, and more rarely those who work on a cold stone floor" (*On the more unusual Forms of Paralysis*, p. 375)—those in fact being chiefly affected who work stooping. Here then is an example of causes predisposing to and exciting simple locomotor ataxy, by acting locally on the nerve-centres.

By thus separating the primary and most essential symptoms from the others, we get a better insight into the order of development of the disease. We find that progressive increase is associated with—not the mere motor disorder—but the sensory symptoms, and that the causes of the two classes of symptoms may be and are different. Whatever tends to debilitate the co-ordinating centres predisposes to the ataxy, and this would be excessive use of those centres from any cause. Now as men are much more commonly engaged than women in those laborious employments which thus exhaust the motor centres, and are more exposed to cold and wet, they must in the same degree be more frequently affected, other things being equal. This, therefore, is one reasonable explanation of the observed differences as to frequency in the sexes. But men are also more liable to sensory exhaustion of the cord than women, for in the act of coition there is more exhaustion of those centres, and in connexion with a group of coordinating pelvic muscles. Hence it is that the true sensory form of locomotor ataxy is so often seen in vigorous virile men, desiring and capable of repeated coition.

In none of the monographs on progressive locomotor ataxy, so far as I have read, is there any examination of the etiology in relation to nerve-anatomy—an important point in practice,—nor in relation to the progressive degeneration of nerve-tissue which is so essential a feature of the affection. In those cases in which venereal intemperance is a chief cause, an inquiry of this kind would necessarily be directed to the anatomy and physiology of the pudic nerves. Now, if we compare the results of this cause in the two sexes, it is obvious that in women the sympathetic connexions of the sacral plexus are chiefly involved, while in man it is chiefly the spinal sensory, and the results differ accordingly; for the symptoms

of undue venereal excitement in women are chiefly of the class vaguely denominated hysterical, and they do not manifest the character of progressive advance to structural degeneration. Looking to the state of the *nervi erigentes* as the primary cause, and to their action on the posterior roots and columns, it would be of importance to determine how far a sudden, short, yet great excess for the time is more dangerous etiologically than more moderate, albeit excessive indulgence, extending over a longer period. I have had cases in which such temporary excess had been evidently the predisposing cause. In certain constitutions, although only indulged in legitimately and for a brief period, as after marriage, such excess would act like a shock or concussion of the cord, or like a blow on the head; that is to say, would constitute the starting point for a gradually developing morbid state, as is seen when injuries to the cranium and nerves of the extremities give rise to serious chronic lesions, as epilepsy, insanity, and paralysis. It is from this point of view the predisposing cause in question assumes such importance in practice.

Recorded cases prove that after allowing for instances in which the causes could be referred to some of those just discussed, provided the history had been well ascertained, a certain proportion remains, of which the origin is unexplained by any known facts of experience. Probably a hereditary predisposition may take effect from simple causes in the offspring of persons who have not manifested the symptoms sufficiently distinctly to insure recognition; or in whom a predisposition only has been induced by some of the known causes. That heredity has some influence in causation appears to be certain. Sunstroke was apparently a predisposing cause in a case under my care, which was treated successfully by nitrate of silver. One limb was more affected than the other. Certain diseases of the prepuce and glans may predispose. Mr. Bryant reports some cases of incontinence and retention of urine in children, in whom the neurosis of the bladder was evidently due to an elongated prepuce partly or wholly adherent to the glans, inasmuch as separating and circumcising it cured the infirmities (*Med. Times and Gazette*, 16th May, 1868). The order of causation here as to the functions of the bladder is of the kind just described; it is not improbable, therefore, that cystitis and urethritis may be predisposing causes of ataxy. In a case lately under my care the history traced the development of the disease to a bad stricture.

The clue to the etiology of the typical kinds of progressive

locomotor ataxy is precisely of the same kind as that which explains the origin of sympathetic ophthalmia, and of the whole group of diseases dependent on progressive centripetal degeneration. The morbid changes commencing in the sensory periphery go on according to a general law, which Dr. Waller, of Brighton, was the first to demonstrate experimentally, and who was awarded a prize of 2,000 francs accordingly, by the French Academy of Science. Dr. Waller's conclusions have been fully confirmed by Claude Bernard and others, and by pathological investigation. Hence the law has been designated the Wallerian law. His researches enable us to understand that the cause of locomotor ataxy is primarily a degeneration of the ganglia on the posterior roots—the intervertebral ganglia. These ganglia (of which the Gasserian is one) have very important relations to the nutrition of the nerve-centres with which they are in anatomical relation; so that when the ganglion degenerates, its spinal commissure (the posterior roots) and the corresponding portion of the posterior columns are successively involved, and thence the disease extends upwards into the encephalic centres either on the same side or on the opposite, according to the kind of nerve involved. Serres (the value of whose labours were of late years too lightly estimated) was the first, in 1824, to indicate this order of events in an admirably detailed history of a case of disease of the right Gasserian ganglion, and Dr. Waller (confirmed by Claude Bernard, Brown-Séquard, and others) has demonstrated experimentally what Serres observed pathologically to be the law of degeneration of nerve-tissue.

Doubtless the pathological anatomy of locomotor ataxy (as indeed of other spinal affections) is defective, but it is chiefly so because the intervertebral ganglia have rarely been examined, attention being directed almost exclusively to the spinal cord. It is generally found that the posterior columns in the dorsal and lumbar region have undergone degeneration. In two cases, however, detailed by Trousseau, the condition of the posterior roots (the intervertebral ganglionic commissures) was observed, and they were found degenerate; and in one examined microscopically by Luys both the commissures and the ganglia were disorganized. In none of the cases have the nerves beyond the ganglia been examined. Their condition must, however, be considered one of the most important points in the anatomy of sexual locomotor ataxy if we look upon the disease as primarily an affection analogous to ordinary neuralgia of the fifth, or tic-douloureux; for in this the disorder not unfrequently com-

mences in the nerve-fibrils, and is propagated thence to the Gasserian ganglion, and so onwards along the so-called roots of the fifth to the Pons Varolii and the brain.

Starting then from these conclusions as to the origin and course of locomotor ataxy we can more definitely determine the seat of the disease, and therewith the prognosis and treatment. Obviously the chief distinction is between those primarily sensory and those primarily motor. The latter are by no means so likely to extend upwards to the medulla oblongata and the basilar centres and nerves of the encephalon, as the former, and therefore not so likely to involve the senses and the understanding.

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Art. XV.—*Zymotic Diseases, as more especially Illustrated by Puerperal Fever.*[a] By Evory Kennedy, M.D., ex-Master of the Dublin Lying-in Hospital, and ex-President of the College of Physicians in Ireland.

In presuming to draw your attention to Zymotic Diseases, and more especially Puerperal Fever (a disease with which you are all so familiar, and one with which my opportunities, I regret to say, have rendered me but too conversant), I shall not weary you with unprofitable details, but at once investigate, with your assistance, their true nature, their characteristic features, and the laws which regulate their production. The tenor and purport of my observations will be directed principally to prevention; whilst I hope some hints may be thrown out in the course of our investigation that may also assist us in treatment.

In order to simplify our subject we shall begin by accepting your acquiescence in the broad principle, that puerperal fever is " par excellence" a zymotic disease.

As a motive for grappling with this class of diseases in the manner I propose to deal with puerperal fever, let us estimate the proportion of general zymotic mortality on the basis of the tables furnished by London and the other great cities of England. We may state it to be between one-fourth and one-fifth of the gross mortality; further, it may be asserted, for argument sake, that zymotic diseases result, in nine out of ten cases, from preventable

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[a] Read before the Obstetrical Society, in the Hall of the College of Physicians, on the evenings of the 13th of March and 10th of April, 1869.

causes.   It follows then that by the prevention of these causes the
mortality may be reduced one-fourth, minus one-tenth.   It would
be quite possible to offer a proximate calculation of the diminution
of morbility under such a reduction of mortality; but the misery,
suffering, distress, and poverty to be prevented by such a consumma-
tion would be beyond human calculation.   The condition precedent
to such results is the acquisition of an accurate knowledge of the
principles that regulate the development and spread of each disease
of the zymotic type; or, at least, of those laws that regulate their
primary occurrence and subsequent growth.   Whether the difficul-
ties that invest the detection and analysis of the subtle poisonous
miasm, and which have hitherto baffled[a] the efforts of physicians for
centuries, are to continue unsolved, is a question within the womb
of time.   But although the miasm or germ has hitherto escaped our
detection, as recognized by its sensible qualities, its existence as an
entity or such primary principle is admitted universally.

The laws that regulate its development and spread are within the
scope of our observation, and we know and can handle certain
morbid solids and fluids in which the poison, at least, may be said
to possess its habitat, if not its essence: witness the lymph of cow
pock, the puss of small pox and syphilis, and the cutaneous powder
of scarlatina, &c.

In the first place, are we to ascribe the different zymotic poisons
to a common principle, modified by a variation in natural or physical
circumstances or conditions?   The fact that diseases of the zymotic
character prevail so frequently at the same time, would appear to
support this opinion.   Their being traceable to the same sources
would further tend to corroborate it, and although they assume
very distinctive characters in their development, yet the same
observation holds in the varieties observable amongst diseases which
belong unmistakably to the same genus, showing that *they*, at least,
have been due to a common origin.   With the occurrence of metria

[a] The latest claim to the detection of the morbific principle is that of Dr. Harris, of
New York, who states that he has detected in cattle infected with the prevailing
plague a living organism or spongiole of definite form and properties, which multiplies
in the body of the infected animal.   Whilst scientific incredulity is to be deprecated
in investigating so obscure a subject, quite as much as accepting hastily any doctrine
or theory because it is new, I confess that looking for an escape out of one difficulty
by accepting another and greater difficulty, requires at least deliberation and "con-
firmation strong" before adoption.   The difficulties attending the elucidation of the
zymotic molecule or germ can scarcely, in this view, be said to be simplified by pre-
supposing the occurrence of so questionable a postulate as spontaneous generation, be
it animal or vegetable.

in hospital after other zymotic diseases have, either accidentally or endemically, shown themselves, all hospital physicians are familiar, so much so, that they look with the greatest apprehension to the result when either typhus, scarlatina, or erysipelas occurs in their maternities.

I cannot illustrate this necessity or the conclusions I have long arrived at, better than by transcribing here a question put to me by a Medical Commission, who were engaged in inquiring into the state of the hospitals and sick poor in the year 1840, with my answer:—

*Query*—" Does puerperal fever appear to have prevailed more extensively when any general epidemic has prevailed in Dublin?"

*Answer*—" Yes; I have remarked that when continued fever, typhus, or erysipelas, were prevalent in the Medical and Surgical Hospitals, puerperal fever appeared to prevail in the Lying-in Hospital, as well as in the city generally. The character of the fever varied also at different times, and occasionally appeared to be influenced in its nature by any prevalent epidemic."

So frequently has metria shown itself afterwards that it is now no longer esteemed an accidental " post hoc," but that they stand in relation of cause and effect. This fact alone goes a considerable way in confirming the idea of a common poisonous principle or miasm. Upon this subject I treated so lately in my paper on Purpuric Puerperal Fever, read before the British Medical Association in 1867, that I shall not dwell upon it further at present.

Should the principle of isomerism, which has of late attracted much notice with our chemists and professors of physical science, come to be established, the difficulties in adopting the idea of a common morbific poison would be lessened. As then the poisonous principle, which we might denominate *zymotocene*, would come to be classed as an original polyatomic molecule or principle, and would fall strictly within Dumas's[a] definition of what he terms *polymorphism*, namely—" one of those variations in the arrangements of integral molecules of a body which influence its physical properties, either temporarily or permanently."

There is nothing at all unreasonable, therefore, in supposing that, as in the case of polymeric or polymorphous hydrocarbons, we may also have the germs of different disease produced by polymeric combinations in the same elements.

[a] Lettre a M Amphere Ann de Chemie et de Phys. xlviii., p. 208.

To descend, however, from the consideration of these general principles to the special subject with which we are more immediately concerned—puerperal fever.  This zymotic disease prevails endemically in crowded hospitals, where it is to be seen in its greatest virulence, and exhibiting its most concentrated fatality; although it is also to be met with in the hovels of the poor and the chambers of the wealthier classes.  When epidemic, showing itself generally in our great maternity hospitals in the first instance, but not confining itself to them: like typhus fever, cholera, scarlatina, and erysipelas, it prevails endemically and like them it is contagious.

The non-contagious furor having pretty well spent itself, reason resumes her sway, and contagion can *now* be spoken of with calmness and toleration.  Whereas twenty years ago the advocate of contagion was worse than an infidel.

The difficulties that beset medical men in investigating the epidemic and contagious nature of puerperal fever were simply expressed by the late Dr. Collins; when, after detailing its prevalence in the early years of his mastership of the Lying-in Hospital, and the success of the steps taken by him to lessen it, he adds— " The facts here detailed are strongly calculated not only to lead us to suspect, but even prove that this fever derived its origin from some local cause, and not from anything noxious in the atmosphere. To this I should assent," he continues, " had we not proof equally well authenticated, of its prevalence and fatality in the houses of the affluent, as already stated."  If the views we have arrived at, and which we now venture to propound, with regard to the true nature of the poisoning in these cases be correct, then the contagious and sporadic nature of puerperal fever will be perfectly reconcilable. Collins's paragraph, above quoted, contains the gist of the puerperal fever difficulty in a nutshell.   Its local cause approaches more nearly to a *constant* quantity in the wards of a crowded Lying-in Hospital; whereas it is only an *occasional* quantity in the houses of the affluent; and the only influence exercised in its production by the atmosphere is, that in certain states of the atmosphere, the constant and occasional quantities become *more operative* or *active* in generating or propagating this dreadful malady,—a malady thus zymotic in its type and origin, produced by a poison emanating from parturient women; more active in proportion to the concentration of their excretions or exhalations, and consequently in proportion to their number cohabiting in a given number of feet of atmospheric space; but not requiring more than one parturient female to generate

it; when the poison she herself has generated may, as in the case of blood-poisoning, be re-absorbed into her own system, and self-contamination then as certainly strike her down as if a crowded ill-ventilated lying-in ward was the generating medium. The most striking parallel that we are acquainted with of the generation and development of diseases under similar conditions are, the gaol fever (a disease now fortunately little met with), erysipelas in surgical hospitals, cholera in our camps and over-crowded human gatherings, and tuberculosis as observed among the poor work people in Paris and other crowded cities, a fact that has given rise to the idea that phthisis should also be classed with zymotic diseases. In Paris, for instance, where this disease prevails so largely among the " ouvriers," it is calculated that 40,000 live huddled together in " chambres garnies," or furnished apartments, containing from eight to ten beds in each. The confining apes in close ill-ventilated menageries generates tuberculosis in these animals, apparently from similar causes; and glanders, a purely zymotic disease, produced by crowding horses together in ill-ventilated stables, furnishes us with a further example. Of the parallel with erysipelas, pyemia, hospital gangrene, and what we might term generally " hospital malaria," we shall have occasion to treat more at large when alluding to traumatic metria.

In distinguishing between puerperal fever or metria and its congeners, it will be unnecessary to my present practical audience to dwell upon afterpains, hysteralgia, or what I used to denominate to my class peritondynia or gastralgia; but peritonitis and metritis may require a passing notice. Such cases, in the pure form as we see them occur unconnected with deliveries, are occasionally to be met with, and may be known as partaking more of the character of local inflammation without zymotic indications. These are the cases that will bear depletion best, and the use of the lancet is too much neglected in them. Twelve to eighteen ounces of blood extracted from the arm, followed by eighteen or two dozen of leeches, will often relieve and subdue all inflammatory symptom, and the pulse that was hard, contracted, and compressed, will, as in ordinary peritonitis, rise to a more rounded resistance under this treatment.

The distinction I should draw between this form of disease and true metria, is that in the latter there are the characteristics of blood poisoning, the shrunken features, the depression, the unmistakable expression of countenance that the practical obstetrician cannot be deceived in.

In true puerperal fever of the present day the use of the lancet is rarely admissible; local depletion must be our sheet anchor. But in having recourse to it the secret of success is to reduce the pain by repetition of leeching before reaction has had time to establish itself.

The physician should see his patient every six or eight hours after the first attack; and if he find that his first leeching has not enabled the patient to bear pressure and relieved her from pain, he should at once apply more leeches before reaction is established, and so on as long as the pulse will indicate the propriety of further abstraction of blood.

Allowing, according to circumstances, a longer interval between each leeching as he finds the necessity become less urgent or the state of the circulation less indicate its propriety. A neglect of attention to this rule has often, to my own knowledge, caused patients to be snatched away by this fatal disease, who, in the hands of less hesitating or more energetic practitioners, might have been fairly reckoned upon as surviving. I know no more harassing trial to the consultant, in these cases, than to have been called into and assisted in subduing, the acute symptoms by prompt and energetic treatment, and then, when matters have improved, to be relieved from attendance under the impression that the danger was over, only to be recalled to see the patient, perhaps, forty-eight hours later, beyond the reach of treatment, from the inflammation having been again allowed to creep on to an impending fatal issue. This has occurred so frequently in my own case, that it left me in doubt whether, for my peace of mind, I should not refuse altogether to see such cases in consultation. Let my younger, and, indeed, my older, hearers be advised by me, whenever they think it necessary to divide the responsibility in such cases, to make the consultant sustain his share of it, until *he* pronounces the case out of danger. This is only fair by the physician in attendance, as well as by consultant, as a contrary practice is sure to recoil upon the ordinary attendant, in case of a casualty. Another practical hint I would wish to impress upon my hearers is, as to the use of mercury in these cases. There is no doubt of its efficacy if you can produce its specific effects; but, in the worst cases, there is not time for this, and indeed the system seems to be insusceptible.

When peritonitis or metria were to be anticipated, as when the disease was prevalent, after manual interference, in labour, or for the removal of the placenta, my habit was, to commence at once after

the labour was completed, with small and frequently-repeated doses of mercury, say a grain or half a grain of grey powder every third or fourth hour, and even applying in more suspicious cases mercurial ointment to the arm pits and groins. By these means, without disturbing the patient's system to any serious extent, in the course of forty-eight or fifty-six hours a slight mercurialization may be perceptible, often before the time at which the disease could grapple the patient; and then, should metria or inflammatory symptoms show themselves, by pressing mercurials a little more freely the system may speedily be brought under its specific influence, and the disease be thus easily checked if it had not already been prevented. I have only on one or two occasions seen puerperal fever prove fatal after mercurialization showed itself, and in them the action was incomplete. But, on the other hand, how often have I seen mercury in every dose fail in producing the slightest approach to its specific effects? I fear the answer to this question would exhibit a fearful array of baffled remedial efforts. I may mention, however, as apparently contradictory to this view a case that occurred under my care, in the Lying-in Hospital, of a woman who came in under the influence of mercury, which she stated she had taken only to the extent of three pills, as what she termed "sweetners;" and yet this woman was attacked with metria on the third day, and the attack proved fatal. Whether this was due to the fact that speedy ptyalism is not always a proof of constitutional mercurialization or to the failure of the prophylactic, my hearers may be the best judges.

In dealing with metria the two-handed treatment, that of relieving local inflammation, whilst we support the constitutional powers—the strength and the circulation, by administering food easily and rapidly assimilated into the circulation, are the two chief indications, the latter just as essential as the former; and, in the true *metria*, or well-marked zymotic puerperal fever, by much the most important of the two. It must never be forgotten that the zymotic metria, *especially*, as we see it in hospital, is a *poison fever*; and no matter how severely it sets in with local distress and anorexia, that it is essentially a disease of debility, passing more or less rapidly into a state of collapse; consequently, that however depletory our treatment may be to check or restrain local distress and lesions, we must look steadily forward and provide for the coming issue—collapse and sinking from exhaustion. Our treatment must, therefore, be directed to that, and nutritious broths,

jellies, milk, and farinacious food should be as freely given as possible, compatible with their being retained on the stomach. The same observations apply to stimulants, but they require more judgment in their administration, and, as a general rule, must be given as we observe their effects to be satisfactory.

On the whole, however, I have little doubt that they are given too *sparingly* and delayed too *long* in their administration— delayed, in fact, until the patient is absolutely sinking, when the stomach will not retain them and they produce no reaction.   There is, however, a form of this disease which I ventured to describe many years ago, in which the symptoms of marked collapse and exhaustion set in early, accompanied with tympanitis, showing an exaggerated train of symptoms from the very commencement—coun- tenance sunken; pulse small, rapid, and compressible; but this state not always accompanied by a corresponding amount of abdominal pain.   I described this form as allied to the class of cases described by Laenec under the term "Factitie Debile." Now, in this case we cannot commence our stimulants too early, and can scarcely administer them too freely.   It is incredible the quantity both of stimulants and nutriments that this class of cases will take.   It is the form in which turpentine treatment best agrees.   It seems to be one in which the intensity of the poisoning and the extent of the inflammatory lesions bear no relative propor- tion, or rather are often to be found in an inverse ratio, *post mortem* examination showing in them only slight effusion; sometimes merely a gelatinous effusion behind the peritoneum in the cellular tissue; perhaps only a large flabby uterus, with intense tympanitic distension, and often little or no effusion in the abdomen, pleura or other cavities, nor any lesion of veins or uterus.

I recollect a case of this kind attended about three years since in consultation with the late Dr. Hardy and Dr. Mitchell.   We left the house on three occasions, scarcely deeming it necessary to make a fresh appointment, the patient's dissolution appeared so imminent; and yet she recovered perfectly and speedily, and with little or no resulting inconvenience, and is now a strong healthy lady.   In this case the lady consumed two bottles of wine, a quart of beef-tea, and a pint of brandy in 24 hours.

In describing the varieties assumed by metria, we would denomi- nate one what we should term traumatic metria, or that occurring as the result of injuries, operations, and lesions of any kind during the delivery.   In this way, when zymotic metria prevails in

hospital or in private, we know that operations or lesions that could at other times be calculated upon, as productive of little or no inconvenience, almost doom our patients either to fatal or alarming illness. The use of the forceps, of the crotchet, rupture of the perineum, abrasions, slight lacerations or injuries in the vagina, nay, even the use of the lancet in venesection, are thus followed by metria, often of the most indomitable character. In fact, the air of the maternity becomes charged with a poison, in many respects similar to what we observe in our surgical and military hospitals. In this way erysipelas, pyemia, arthritis, diffuse inflammation, phagedena, or hospital gangrene, run their course of havoc, exactly as in the operation wards of surgical institutions. The year 1838 was replete in the Dublin Lying-in Hospital with these traumatic cases. I drew the attention of the British Medical Association to some of their varieties at their meeting in Dublin in 1867; and showed drawings made at the time by Kirwan, Conoly, and myself. I shall here give a case of traumatic puerperal gangrene, combined with cerebro-spinal symptoms and purpuric discolourations that occurred in that epidemic.

Margaret M'Gouran, aged thirty-two, who was doing well for two days after her delivery with the forceps, in consequence of tedious labour, was attacked on the morning of the 2nd of March, 1838, by cerebral symptoms, with rapid pulse and slight abdominal tenderness. Her excitement was so great that she became unmanageable, and was obliged to be restrained in bed. She complained incessantly of pains in her legs. The whole surface of the body, but more especially the face and lower extremities, became livid. Large blue coloured bullæ, or vesicles, appeared on different parts on the lower extremities. The excitement subsided in a few hours into a state of depression, and she sank at noon on the 3rd, about twenty-eight hours from the commencement of the attack. Only an abdominal examination could be obtained of this case, when a small quantity of bloody serum was found in the peritoneal cavity, and some sloughing in the vagina. The subcutaneous cellular tissue of the body was the seat of congestive infiltration, this was particularly evident when a section of the adipose wall of the abdomen was made and the left lower extremity was livid.

The black serum brings to recollection my old friend Dr. Alison's case of the black fluid in the blistered vesicles.

Those who have had an opportunity of seeing this class of case

will bring to mind that in arthritic metria the joints are generally secondarily affected, and that at intervals of several days, nay often of weeks after the peritonitis or metritis has run its course. It was not so in several of those, which I might term thundering cases of arthritis that occurred in 1838. On the contrary, the joints were the first organs attacked, and the knee, the elbow, the ankle, the wrist, but above all, and the most violent of all the sacro-iliac synchondrosis, assumed in turn the lead, as the structure attacked. In some there occurred erysipelatous inflammation of the buttock. The torture attending these arthritic forms is extreme in all cases, but in that where the synchondrosis was engaged it was absolutely intolerable. The fullest opiates failed to afford relief, and violent as was the outburst, and extensive as was the structure engaged, although some of them proved rapidly fatal, others yielded to treatment: but only to that of the most prompt and decided kind; namely, the application of superficial caustics and escharotics, but chiefly to the free use of the actual cautery. Those cases in which lesions occurred in labour, as lacerations of the perineum, were attacked with hospital gangrene, when the free use of caustics and mineral acids, with chloride of soda lotion and antiseptic poultices, were useful. Erysipelatous inflammation of the buttock proceeded in more than one case to gangrenous sloughing and in another of this kind, although the ankle and knee were both extensively engaged, the woman recovered.

Bold incisions were made in some of these cases, under the advice of the late able and distinguished surgeon Abraham Colles; but the result was not satisfactory, and uncontrollable hemorrhage even followed their use.

The last variation of type, observed as a genus, of the general family of metria, to which I shall direct your attention, is what I designated in a paper read at the meeting of the British Medical Association, "Puerperal Purpuric Fever." I described it as a disease of peculiar malignity, that appeared in an endemic attacking the patients in the Lying-in Hospital, in December, 1837, then under my care, and which carried off thirty-five patients between that month and the month of April, 1838.

In a certain proportion of those attacked, symptoms exhibited themselves unlike what had hitherto been observed in metria. Those symptoms corresponded in their characteristics with what Dr. Marston clearly described in his two classes of the disease so

unfortunately denominated the " Black Death," and which attracted so much attention two years ago in this country,—Firstly, those expressive, as he justly terms it, of profound blood poisoning; second, those of cerebro-spinal irritation.

Owing to some mismanagement, the coloured illustrations that were to have appeared with this paper, have been mislaid, in their transmission from Edinburgh to London, and the publication of the paper was delayed in consequence.

## PUERPERAL FEVER, WITH RAPID COLLAPSE, PRECEDED BY CEREBRO-SPINAL IRRITATION, 1838.

CASE I.—Anne Whelan had been drinking a large quantity of spirits before admission. In the progress of her labour she had convulsive twitchings of the arms, and tremulous motions of the hands, and a slight convulsive paroxysm. This woman made no complaint in the course of the day after her delivery. She appeared to sleep through the night, but was found, at the next morning visit, in a state of collapse, with her abdomen tympanic. Stimulants, externally and internally, were freely administered, and she died in six hours.

The only morbid appearance revealed, on a *post mortem* examination, was a small quantity of serum, tinged with blood, in the peritoneal cavity.

CASE II.—Mary Sheridan had rigors on 17th January, 1838. Pulse 120. No local pain—(three days delivered). On the 20th, at two o'clock in the morning, had an attack; pronounced hysterical, with marked globus; crying and laughing. At eight o'clock she fell into a state of stupor, with stertor, and remained comatose until four p.m., when she expired.

*Post mortem appearances.*—The omentum and peritoneum opaque and covered with lymph; a pint of milky serum in peritoneal cavity; lungs coated with plastic lymph, congested and crepitating. Both pleural cavities filled with flaky lymph adhesions; transparent serum in pericardium: right auricle filled with fibrine; blood fluid; uterus soft and easily torn; ovaries embedded in lymph; subarachnoid effusion and effusion into ventricles.

The dissection here fully evidences the existence of puerperal fever. Now, this fact becomes the more important when we draw the analogy we attempt between the recent typhus and the puer-

peral epidemic of 1838   Sheridan's case is one of several that have occurred to me in puerperal fever, in which the hysteric complication furnished an unfavourable prognosis.   The same fact has been dwelt upon by Cheyne and Graves, and more recently by Hudson, when hysteria occurs in fever.   The latter astute physician connects its occurrence with suppression of the menses.

The next case we shall give is one in which head symptoms were also very markedly observed to complicate the fever, which ran to a more chronic form, with consecutive arthritis.

CEREBRO-SPINAL PUERPERAL FEVER, FOLLOWED BY ARTHRITIS.

Mary Lynch, delivered on the 30th January, 1838, was attacked by rigor on the 3rd February, with febrile symptoms; much flushing; pulse 130; some abdominal pain.

On the 4th delirium set in, with great restlessness, anxiety, and spasmodic respiration, headache, and rapidity and indistinctness of articulation.

5th.—Delirium continues, with headache, more distressing in occipital region.   She struggles to get out of bed.   Tongue streaked red; peculiar exhalation from tongue and mouth; sickness.

6th.—Violent and incoherent muttering, but answers rationally when addressed; pulse 136.

7th.—Raving and starting; a quantity of vapour issuing from the mouth; less complaint of head, but complains of abdominal pain, and of pain in left arm; pulse 144.

8th.—Slept well; no delirium; asks for drink; pulse 136; elbow-joint engaged; tender, swollen, hot, and red; stick nitrate of silver freely applied to it.

9th.—Delirium returned in the night; stupor and muttering; elbow more swollen; left knee and bursa engaged; retention of urine.

On the 10th the arthritis extended to the wrist; diffuse inflammation seized upon the buttock and the parotid gland; and the case assumed the characters of consecutive arthritis, and terminated fatally with effusion into pleura, on the 15th.

We have now to deal with the dark discolouration observed in these cases.   The whole question of these, as well as in puerperal typhus, purpuric typhus, purpura, as in cholera, demand elucidation.

The hemorrhagic and scorbutic complications, to which it is referred, give us little assistance, and, with Flint, I have little doubt

that its explanation must be looked for in the capillary system, and perhaps in the blood itself.

### FEVER WITH BLUE DISCOLOURATION OF SURFACE.

Mary Carton, aged twenty-seven, was attacked on the 11th of April, 1838, three days after a natural delivery, with aching abdominal pain—quick pulse, and high state of excitement. On the 12th, pulse 134; expression of countenance bad; hands and feet blue.

13th.—Blue tint extends to face and trunk; pulse almost imperceptible; respiration gasping; little abdominal suffering, unless on pressure.

14th.—Sinking; died at ten a.m., fifty-six hours ill. No *post mortem* examination permitted.

### PUERPERAL FEVER, WITH DISCOLOURATION OF LIMB, VESICLES, GANGRENE, AND COLLAPSE.

Biddy Fox, aged thirty, was seized with rigor, followed by febrile excitement on the 5th May, 1838—the fifth day after her delivery of a seven months' child, caused by fright. She had only been three hours in labour. The fever continued without any local affection or abdominal tenderness throughout the 6th, and at three a.m. of the 7th, she was seized with acute pain in the calf of the left leg. At morning visit her state was as follows:—Countenance anxious, and expressive of suffering, and great constitutional disturbance; pulse small, 96; calf of leg swollen, tense, and acutely painful on slightest touch; no pain up thigh, but some uneasiness on deep pressure, low on left side of abdomen; skin hot; constantly crying about pain of leg; twelve leeches were applied to calf of leg; at one p.m. the limb became discoloured, the discolouration gradually extending up the thigh and down to the ankle and foot, where vesications rapidly formed. Some punctures were made in the calf of the leg and popliteal space by my able colleague, the late Surgeon Abraham Colles, in search of matter; but the pulse became rapid and indistinct, and she rapidly sunk, and expired at seven p.m., fifty-six hours from the occurrence of the rigor, and sixteen hours from the seizure of the limb. The femoral and tibial arteries continued pervious throughout, and the temperature of the left limb was higher than that of the right.

No examination permitted.

PUERPERAL FEVER, WITH GANGRENE OF UTERUS: SYMPTOMS
PRECEDING DELIVERY.

Mary 'Anne Brennan was admitted at 11 a.m. on the 8th Jan.,
1839, in the ninth month of gestation.   About two o'clock the
pupil on duty reported that she complained of great pain in her
right thigh.   On examination it was found large, tense, very
painful along the course of the rectus muscle; but tenderness did
not extend upwards as far as the saphena vein.   There was also
some soreness in the right iliac fossa.   Pulse quiet and small; tongue
furred.   States that about a week before she had had a rigor, fol-
lowed by sudden loss of power in right leg, and that yesterday
she had another shivering fit.   Twelve leeches were immediately
applied to the limb, and within an hour she expressed herself much
relieved.   At half-past five o'clock p.m. she was conversing with
the nurse, when she was observed suddenly to sink, her arms
becoming powerless.   Notice was immediately sent to the assistant
on duty, who found her pulseless, eyes glazed, feet cold, features
collapsed—in fact, moribund.   Stimulants were administered, but
she expired in a few minutes.

The Cæsarean section was performed, and the child removed, but
it exhibited no signs of vitality, nor could its heart's action be
detected at the moment of the mother's death.

On drawing backwards the abdominal parietes, the ovary and
Fallopian tubes, particularly on the right side, were gorged with
blood, and the structure of the uterus in their immediate neigh-
bourhood was dark and softened—in fact, in a state of ramol-
lissement.   The fimbriated extremity was glued by soft, freshly-
effused lymph to the peritoneum.

The following cases, passing into erysipelas, purulent depôts,
cellular sloughs of the character of anthrax, and arthritis, show
more strikingly how puerperal fever, like typhus, is ascribable to
a poison which vitiates the blood and passes through a series of
consecutive states, due to what are termed poison depôts in various
parts of the body:—

Mary A. Keating was seized, on the 10th of December, 1837,
with erysipelas of the elbow-joint, on the tenth day after her
delivery.   The solid nitrate of silver was freely applied to it, with
relief.   The buttock became engaged on the 12th, and the nitrate
of silver was freely applied.   The pain, which was intense, was
relieved.   She had much prostration, diarrhea, and rigors, at

intervals, and great nervous anxiety. Potassa fusa was now applied to the buttock.

The inflammation here became circumscribed, and, on the 17th, the sterno-clavicular articulation became engaged. Not until the 29th could matter be detected in the buttock, when a puncture was made. Some matter escaped, and ultimately a mass of sloughed cellular tissue separated. She gradually improved, the joints engaged, returning to their natural state, and she left the hospital on the 4th of January, becoming convalescent.

The hopeless character, however, of the more urgent cases, in which the large joints and adjacent structures take on this poison action, may at once be seen by looking at the specimens, which exhibit the trochanter eroded by ulceration, the two hip-joints engaged, the sacrum in a state of destructive ulceration, whilst the soft parts of the upper part of the thigh and gluteal muscles were in an advanced stage of ramollissement, and those on the left absolutely sphacelated. Surely, if ever the true εσθιομενος of the Greek fathers in medicine, justifying the synonym of the Latin, *exedens, depascens, corrosivus*, is to be found in modern pathology, we have it here.

Sydenham and other authorities have long established the fact that fever at different times and places may be characterized by peculiar and various local tendencies. And science, it is remarked, is no better prepared to explain their occurrence now than at any past period in medical history. By some, these varieties are merely considered complications or inter-current symptoms; by others pathognomic essentials, which justify the conclusion that the diseases are distinct in cause, symptoms, history, and pathology, and ought, consequently, to be so in name. In investigating both the predisposing and occasional causes which exist without the body of the diseased person, the "*circumfusa,*" "*ingesta et applicata,*" arising from the influence of external bodies, we too frequently lose sight of the assistance to be gained from the study of "Epizotia" or diseases of animals. In epidemic and contagious diseases this is much to be regretted. It was long since remarked by Guersent, that the circulatory and nervous systems of warm-blooded animals approach nearly to our organization, and their diseases present an analogy with ours. "The essential and symptomatic fevers ascribable to excitation of the nerves and blood-vessels, and the reaction of these organs upon each other, occur in them, and especially in the mammalia, with the same characters and almost the same names.

The resemblance between *their* maladies and those of *man* are sometimes so perfect, that it is impossible not to place them in the same "nosographic câdre," and not to assign them the same name. The discrepancies of opinions upon a name to be appropriated to the late epidemic might have been reconciled or harmonized had the phenomena observed in some of the epidemics which have prevailed amongst animals been looked to. For instance, in the epidemic typhus which prevailed amongst horned cattle in France in the year 1795, as well as in that of 1814, M. le Professeur Dupuis constantly observed " that the spinal marrow was more injected and soft than natural, the meningeal coverings were red, and contained in their folds a large quantity of limpid and transparent serum, and, in the lumbar region, the medulla was softened, and the cellular tissue of the lumbar and sacral nerves gorged with blood-serum. The brain in these animals dying of typhus was not so often observed softened as the medulla, but sometimes the meningeal coverings were more injected and red, and the ventricle often filled with a quantity of citrine serum."

Cerebral symptoms have also been observed in epidemic catarrh of dogs, assuming, in its progress, the form of epilepsy, or dance of St. Guy. Edward Jenner tells us of a gentleman who killed several of his dogs labouring under this disease, supposing it hydrophobia. Dissection displayed a soft brain; the ventricles full of serum, and the medulla softened, and fluid in its membranes. The "epizootic charboneuse" or typhus of domestic fowl, which prevailed in Paris in 1780, and whose chief complications were gangrenous angina and ophthalmia, was accompanied with convulsions of the wings, and other parts of the body, and the bird expired after a rattle of a peculiar kind, apparently convulsive, which resembled a plaintive cry proceeding from the bottom of the throat, not unlike spasmodic croup. On dissection, the brain was found gorged with blood, the interior of the bill and pharynx and external parts gangrenous, and ecchymosis in the different viscera.

We adduce these cases to show that, in the animal as well as man, modifications of known diseases occasionally occur, as in the puerperal cases observed by me in 1838, as well as in the latter cerebro-spinal cases *intercurrent* with the ordinary disease. The original type or generic characters prevailing and existing, whilst the varieties assume a more less prominent position, throughout its progress. Where these occur, as we might say, accidentally, in a peculiar epidemic, as, for instance, in the five cases of parotiditis out

of thirty-five recorded by Dr. Flint, and leave no permanent distinctive features, merely cropping up sporadically subsequently; they should be treated as complications due to causes in operation at the moment, evanescent in their nature, and in no way necessary to characterize the case, therefore, unworthy of a special name. When, however, on the other hand, we have a train of symptoms nearly constant in their occurrence, such as a peculiar eruption present, a peculiar structure engaged; non-contagious in its nature, not transient, not accidental in its occurrence, but permanently established amongst us, and traceable, as it is often, to cognate causes; then, I think, we must grant such a train of symptoms a right to be considered a distinct disease, and endow it with a special name, as we have done in the case of typhoid or enteric fever.

It remains still to be proved whether the group of symptoms observed to occur in the recent epidemic, shall recur and become permanent, as has been the case in enteric typhoid, or whether they shall assume those distinctive marks which have so isolated the latter disease, the very name applied to which evinces that it exhibits generic characters that assimilate it to a parent type.

The non-recurrence for nearly thirty years of an epidemic exhibiting the same characters as the cases described by me in this paper as puerperal typhus, would lead us to hope that such may possibly be the case as regards the recent epidemic also, and, consequently, that, failing in its element of permanency, it might only be referred to hereafter as a form of typhus prevailing in the spring of 1867, and limited to a small number of cases, attended with cerebro-spinal symptoms, discolouration, and collapse, and which may take its place with the puerperal typhus of the Dublin Lying-in Hospital of 1838, with epidemic typhus amongst horned cattle in 1795 and 1814, and with the typhus charboneuse in domestic fowl of 1780—all of which partook more or less of the same pathognomic characters.

It will be recollected that in the commencement of this paper we stated we had in view two practical objects—the cure and prevention of puerperal fever—but that the latter should occupy our special attention. To deal with both required a knowledge of what we termed the principles of the disease, or, more correctly, of the laws which observation and comparison satisfy us are those which govern it in its occurrence and recurrence.

We further stated that it was a disease purely zymotic in its character, consequently subject to the laws which hold in zymotic disease.

We stated as a motive to our investigation that growing knowledge had led to the conviction—a conviction every day strengthening—that zymotic disease is, in a great measure, preventable.

Hitherto we have been occupied in describing the varieties of metria with which I myself have been made familiar; and as it is of the utmost importance that no misapprehension, confusion, or deception should exist upon the subject, I wish it to be understood distinctly that every form of the disease described by me partakes of the zymotic character, is subject to the laws regulating this family of diseases, is capable of extension in the same manner as endemic, epidemic, and contagious disease, but, above all, that (by proper means) it *is preventable*.

Now, as it is impossible to be too explicit on this subject, where so much is at stake, we shall state that whilst we cannot, of course, object to the subdivision of diseases of the same type according to the structures engaged, for the sake of classification, we deem it quite important, for the sake of treatment, but, above all, of prevention, that diseases, especially of the zymotic type, should be so classed and arranged as to identify their common causes, predispositions, origins, treatment, and means of prevention. We mention this because the neglect of this rule renders our treatment empirical, frustrates our elucidation of the principles which develop the disease, prevents its recognition, and perpetuates its ravages.

We shall therefore classify the whole family under the head of "zymotic metria," in preference to that by which it has been hitherto received, of "puerperal fever;" and under this common head we shall treat, as modifications of the same disease, puerperal fever, metritis, peritonitis, pleuritis, phlebitis, arthritis, pyemia, purpuric, or cerebro-spinal metria, traumatic metria, erysipelas, and hospital gangrene.

This I feel fully justified in doing, because I have traced one and all of them to the same contagium; several of them have prevailed in the same patients, and again and again in different patients at the same moment, under my own observation, when the hospital under my care was charged with the same zymocene; the varieties cropping up in adjoining beds, and referable, as in the traumatic form, to circumstances and causes traceable at the time.

Again, in the cases successfully treated, it will have been observed that the same treatment has been successful with all, supporting the strength, meeting local inflammation by mercury, local depletion, counter irritation and turpentine, issues of different kinds, and the decided but judicious use of stimulants.

The task now remains to us to state to what this contagion is due, or rather upon what combination of circumstances it depends; and in order to do this we must establish certain propositions:—

1. That puerperal metria is due to the absorption of a poison by the parturient female.

2. That this poison may be generated by any parturient female; and, where the circumstances are favourable to its imbibition, it may be absorbed into the system of the generator or that of any other parturient female exposed to its influence.

3. That the generation and absorption of this contagion is in a direct proportion to the number of parturient females cohabiting at their parturient period, or who breathe the same atmosphere when lying-in.

4. That in lying-in hospitals, where large numbers of patients are delivered under the same roof, this disease finds its habitat, appearing and reappearing at uncertain intervals.

5. That its appearance, although apparently capricious, is not infrequently traceable to the occurrence of other zymotic diseases, to a general unhealthy state of the hospital, the labours for some time being succeeded by bad recoveries, before the true zymotic metria exhibits itself.

6. That it is produced by contagion, long experience proves, following in the steps of certain practitioners, whilst others are totally free from it, and that in the same locality.

7. It is endemic, confined in its occurrence to certain localities.

8. It is not only confined in its occurrence to a given hospital, but it is observed to haunt certain wards of the hospital, and this to such a degree that I have been obliged to close up for many months wards in which it established its special habitat.

So much for our positive proposition.

Now for the negative; and whilst we freely admit that negative evidence is less valuable, we look upon it that here it is essential to complete the chain of reasoning.

9. Zymotic metria is not a disease peculiar to parturient women

confined in their own houses, occurring comparatively rarely among them.

10. It is not a disease observed to occur in small lying-in hospitals or cottages where only one or two patients cohabit in their lying-in.

11. The just and inevitable conclusion from the foregoing propositions is that by continuing the system of large lying-in hospitals we are causing the death by zymotic metria of a number of patients for one that would occur under any system that would secure the separation or isolation of women in their confinements.

12. But as hospitals possess advantages facilitating the cure of patients and as schools of instruction, it is quite possible to combine these advantages with those of the separate system by means of grouped but isolated cottage or pavilion hospitals, with only one, or, at most, two beds in each isolated room.

13. That consequently with our present knowledge of puerperal fever the conclusion is inevitable that the mortality among parturient women would be greatly lessened by an alteration in the construction and arrangement of lying-in hospitals.

As I have already dwelt sufficiently upon the first and second proposition in the first part of my paper, we shall now confine ourselves to the description of the subsequent propositions, beginning with the third and grouping the fourth along with it as a corollary, that the generation and absorption of the metria contagium is in direct proportion to the number of parturient females cohabiting in their lying-in, and that its habitat is the great lying-in hospitals. In affording proof of these positions, as in all the others I venture to propound, I shall give, in the first instance, my own experience, which I regret to repeat is but too comprehensive of this dread disease; and then the reliable experience of such other authorities as bear on the subject at issue.

The statistics of my own private practice, not of course including consultations, were, that out of about 3,500 deliveries, three fatal cases of puerperal fever or metria occurred. That is something under 1 in 1,200; whilst in the 13,157 patients delivered under my care from the years 1834 to '40 inclusive, in my mastership of the hospital, the number of fatal cases of zymotic metria were 117, or a little more than 1 in 112. Therefore, of the patients delivered under my own care, and for whom I was responsible to God and man, ten and eight-tenths, or almost eleven died of those in my charge in hospital for one in private, or in their own homes. This,

gentlemen, is an awful consideration; and, mark me, had we then possessed our present knowledge, this was all preventable, as the result of our investigation will prove.

It may be objected to this that the lying-in hospital admits the worst cases, many of them advanced in labour sent from considerable distances, exhausted and half starved. True, these matters must be taken into account as increasing the mortality; but, alas! there was a large margin to include all these cases, as the 117 deaths above reported merely included those who succumbed to metria. 101 more deaths also occurred in the 13,157, ascribable to child-birth and other diseases, a number amply sufficient to include every casualty and peculiarity to which hospital patients are obnoxious, and leaving untouched the grim array of 117 deaths by preventable metria.

Let us take the six years for which the Census Office in Dublin furnish data upon this subject, *i.e.*, from 1864 to 1868 inclusive. Although we do not obtain from these tables the number of deliveries, yet we can approximate to this pretty accurately by deducting the twin-births from the gross births, thus:—

Total births for the six years amount in the Dublin
    Registration District to   .    .    .    .    . 52,126
Deduct the usual ratio of twins, 1 in 60, as furnished
    by Collins's tables, the largest proportion of any
    country of which we have record,    .    .    . 862

That gives deliveries  .    .    .    .    . 51,264
Divide into this the total number of deaths, including
    childbirth (197) and metria (251),    .    .    . 448

The result is one death in 114½. This result, however, includes the deaths by puerperal fever in the hospitals, as well as generally throughout the city and suburban districts.

If we deduct only the deaths in childbirth (197) this would leave the mortality one in 265; but this would be manifestly an objectionable standard of comparison, as a certain proportion of sporadic cases of metria occur throughout the district, and at times this even assumes an epidemic character. We should be justified, however, in deducting the cases of metria occurring in hospital from the gross number of deaths, and then allowing an equivalent for the average

proportion of cases of metria occurring in the District without the hospitals, for the five years calculated, thus:—

In the two Lying-in Hospitals, from 1864 to 1868 in-
    clusive, there were delivered    .    .    D. L.  5,758
                                                C.  2,266
                                                    ——————
                Total    .    .    .    .    .    .  8,024
In the five years recorded the deliveries amounted in the
    city to    .    .    .    .    .    .    .    . 51,264

Outside of the hospitals the proportion by metria was 1 in 457, whilst in the hospitals it was 1 in 60. Allowing then an equivalent of deaths by metria within the hospitals for that without, one-seventh and one-half a seventh, including extra casualties and difficulties, that would leave it that 6 women died out of every $7\frac{1}{2}$, from being delivered within the walls of the hospitals, instead of in their own homes, or properly constructed huts or cottage hospitals. But if we take the two preceding years, so as to give a seven years' equivalent to my mastership already alluded to, the deaths in the hospitals from metria amount to 1 in 50 for the seven years, from 1862 to 1868 inclusive; and taking it for granted that the deaths from metria bore the above-stated proportion outside the hospitals, then the result would be that in the City of Dublin alone $7\frac{1}{2}$ women die out of every 9 from being confined in hospitals; in other words, that in all the deaths that have occurred in Dublin for the last seven years in parturition, out of every 9 deaths $7\frac{1}{2}$ women have died, who would in all human probability be at this moment alive had they been confined in their own homes, or in isolated cottage hospitals.

The Registrar-General's reports for England and Wales give, for three years, an average of :—

1 death by metria in 726; 1 by childbirth in 306 deliveries.
                From both causes, 1 in 223.
                        In London:—
        1 death by metria in 515; 1 by childbirth in 429;
                From both causes 1 in 239.

In 27 cities and towns in England the mortality was, in the two years, 1862–63,

        1 in metria in 781; from accidents of childbirth, 301.
                From both causes, 217.

The Registrar-General of Scotland gives, for the two years, 1861–62, deaths:—

1 by metria in 400; by accidents in childbirth, 1 in 345.
From both causes, 1 in 225.

In Glasgow the deaths were, from both causes 1 in 227, of these two-fifths died of metria, and three-fifths from accidents in childbirth.

In seven of the most trading towns in Scotland the mortality was in the proportion of 1 death to 170 deliveries. The deaths from metria were about a third less than those from accidents in delivery.

But it is stated that, even admitting the mortality from puerperal fever to be greater in large lying-in hospitals, that this mortality is more than counterbalanced by the lesser number who die in them from other causes, or, as it is termed, from childbirth, and that, as the saving of human life in the aggregate is the object aimed at, the lying-in hospitals best attain it; but the plea, I regret to say, is totally fallacious, as the mortality from childbirth exclusively in the Dublin and Coombe Lying-in Hospitals combined amounted to 1 in 1 30 from 1864 to 1868, whereas those in the Metropolitan District for the same period only amounted to 1 in 260; and, as we have just seen, the average mortality from accident of childbirth in England and Wales for three years was only 1 in 306. That of 27 large towns in England was, in childbirth, in the year 1862, only 1 in 290, and in 1863 only 1 in 312.

In Scotland the deaths from childbirth, independent of metria, were only 1 in 345 births in the years 1861–62. And yet those who propose the fallacy alluded to would still assert that the recoveries are better and the mortality less from childbirth in great lying-in hospitals, if we exclude deaths by metria, than in the houses of the poor, or in cottage hospitals.

The mortality in the Waterford Cottage Hospital from childbirth, independent of metria, we should have mentioned was only 1 in 180.

Is it useless now to dwell upon the retrospect of what has occurred? The mischief is done, and may only be alluded to as a beacon to warn us against the continuance in such a fatal course. Out of the 190,783 deliveries occurring in the Lying-in Hospital since its foundation, 2,627 deaths have occurred, or 1 in $72\frac{1}{2}$. Now, taking the ordinary calculation of our present death rates at 1 in 116, according to the Commissioners' return, that would leave a fearful avoidable or unnecessary loss of life in the difference between 1 in 72 and 1 in 116.

## DEATH-RATES OF DUBLIN LYING-IN HOSPITAL, FROM ITS FOUNDATION TO 1868:—

| Year | Number of Patients | Deaths | Death | | Deliveries | Year | Number of Patients | Deaths | Death | | Deliveries |
|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 3975 | 45 | 1 | in | 88 | 1800 | 1337 | 18 | 1 | in | 74 |
| 1757 | 55 | 1 | 1 | in | 55 | 1801 | 1725 | 30 | 1 | in | 57 |
| 1758 | 454 | 8 | 1 | in | 50 | 1802 | 1985 | 26 | 1 | in | 74 |
| 1759 | 406 | 5 | 1 | in | 110 | 1803 | 2028 | 44 | 1 | in | 46 |
| 1760 | 556 | 4 | 1 | in | 139 | 1804 | 1915 | 16 | 1 | in | 120 |
| 1761 | 521 | 9 | 1 | in | 52 | 1805 | 2220 | 12 | 1 | in | 185 |
| 1762 | 533 | 6 | 1 | in | 88 | 1806 | 2406 | 23 | 1 | in | 104 |
| 1763 | 488 | 9 | 1 | in | 54 | 1807 | 2511 | 12 | 1 | in | 209 |
| 1764 | 588 | 12 | 1 | in | 49 | 1808 | 2665 | 13 | 1 | in | 205 |
| 1765 | 533 | 6 | 1 | in | 88 | 1809 | 2889 | 21 | 1 | in | 137 |
| 1766 | 681 | 3 | 1 | in | 227 | 1810 | 2854 | 29 | 1 | in | 98 |
| 1767 | 664 | 11 | 1 | in | 60 | 1811 | 2561 | 24 | 1 | in | 106 |
| 1768 | 655 | 16 | 1 | in | 41 | 1812 | 2766 | 43 | 1 | in | 64 |
| 1769 | 642 | 8 | 1 | in | 80 | 1813 | 2484 | 62 | 1 | in | 40 |
| 1770 | 670 | 8 | 1 | in | 80 | 1814 | 2508 | 25 | 1 | in | 100 |
| 1771 | 695 | 5 | 1 | in | 139 | 1815 | 3075 | 17 | 1 | in | 180 |
| 1772 | 704 | 4 | 1 | in | 176 | 1816 | 3276 | 18 | 1 | in | 182 |
| 1773 | 694 | 13 | 1 | in | 52 | 1817 | 3473 | 32 | 1 | in | 108 |
| 1774 | 681 | 21 | 1 | in | 32 | 1818 | 3539 | 56 | 1 | in | 63 |
| 1775 | 728 | 5 | 1 | in | 145 | 1819 | 3197 | 94 | 1 | in | 33 |
| 1776 | 802 | 7 | 1 | in | 114 | 1820 | 2458 | 70 | 1 | in | 35 |
| 1777 | 835 | 7 | 1 | in | 119 | 1821 | 2849 | 22 | 1 | in | 129 |
| 1778 | 927 | 10 | 1 | in | 92 | 1822 | 2675 | 12 | 1 | in | 220 |
| 1779 | 1011 | 8 | 1 | in | 126 | 1823 | 2584 | 59 | 1 | in | 44 |
| 1780 | 919 | 5 | 1 | in | 183 | 1824 | 2446 | 20 | 1 | in | 122 |
| 1781 | 1027 | 6 | 1 | in | 171 | 1825 | 2746 | 26 | 1 | in | 105 |
| 1782 | 990 | 6 | 1 | in | 165 | 1826 | 2440 | 81 | 1 | in | 30 |
| 1783 | 1167 | 15 | 1 | in | 77 | 1827 | 2550 | 33 | 1 | in | 77 |
| 1784 | 1261 | 11 | 1 | in | 114 | 1828 | 2856 | 43 | 1 | in | 66 |
| 1785 | 1292 | 8 | 1 | in | 161 | 1829 | 2141 | 34 | 1 | in | 63 |
| 1786 | 1351 | 8 | 1 | in | 170 | 1830 | 2288 | 12 | 1 | in | 190 |
| 1787 | 1347 | 10 | 1 | in | 134 | 1831 | 2176 | 12 | 1 | in | 181 |
| 1788 | 1469 | 23 | 1 | in | 64 | 1832 | 2242 | 12 | 1 | in | 187 |
| 1789 | 1435 | 25 | 1 | in | 57 | 1833 | 2138 | 12 | 1 | in | 178 |
| 1790 | 1546 | 12 | 1 | in | 129 | 1834 | 2024 | 34 | 1 | in | 60 |
| 1791 | 1602 | 25 | 1 | in | 64 | 1835 | 1902 | 34 | 1 | in | 56 |
| 1792 | 1631 | 10 | 1 | in | 163 | 1836 | 1810 | 36 | 1 | in | 50 |
| 1793 | 1757 | 19 | 1 | in | 92 | 1837 | 1833 | 24 | 1 | in | 76 |
| 1794 | 1543 | 20 | 1 | in | 77 | 1838 | 2126 | 45 | 1 | in | 47 |
| 1795 | 1503 | 7 | 1 | in | 214 | 1839 | 1951 | 25 | 1 | in | 78 |
| 1796 | 1621 | 10 | 1 | in | 152 | 1840 | 1521 | 26 | 1 | in | 59 |
| 1797 | 1712 | 13 | 1 | in | 131 | 1841 | 2025 | 23 | 1 | in | 88 |
| 1798 | 1604 | 8 | 1 | in | 200 | 1842 | 2171 | 21 | 1 | in | 103 |
| 1799 | 1537 | 10 | 1 | in | 153 | 1843 | 2188 | 22 | 1 | in | 99 |

| Year | Number of Patients | Deaths | Death | Deliveries | Year | Number of Patients | Deaths | Death | Deliveries |
|---|---|---|---|---|---|---|---|---|---|
| 1844 | 2176 | 14 | 1 in | 155 | 1858 | 1084 | 30 | 1 in | 36 |
| 1845 | 1411 | 35 | 1 in | 40 | 1859 | 1389 | 21 | 1 in | 66 |
| 1846 | 2025 | 17 | 1 in | 119 | 1860 | 1404 | 26 | 1 in | 54 |
| 1847 | 1703 | 47 | 1 in | 36 | 1861 | 1135 | 59 | 1 in | 19 |
| 1848 | 1816 | 35 | 1 in | 52 | 1862 | 800 | 58 | 1 in | 14 |
| 1849 | 2063 | 38 | 1 in | 54 | 1863 | 1228 | 32 | 1 in | 38 |
| 1850 | 1980 | 15 | 1 in | 132 | 1864 | 1184 | 26 | 1 in | 46 |
| 1851 | 2070 | 14 | 1 in | 148 | 1865 | 1332 | 30 | 1 in | 44 |
| 1852 | 1963 | 11 | 1 in | 178 | 1866 | 1074 | 40 | 1 in | 27 |
| 1853 | 1906 | 17 | 1 in | 118 | 1867 | 1146 | 40 | 1 in | 39 |
| 1854 | 1943 | 37 | 1 in | 53 | 1868 | 1022 | 39 | 1 in | 27 |
| 1855 | 1060 | 35 | 1 in | 30 | | | | | |
| 1856 | 1600 | 25 | 1 in | 64 | | 190783 | 2627 | 1 in | 72 |
| 1857 | 1509 | 33 | 1 in | 46 | | | | | |

But in stating the gross mortality of the Dublin Lying-in
Hospital now as 1 in 72 I should lead you into an error, as you
will perceive by this table of the annual mortality, given from its
foundation, that for the last fifteen years it has never been less
than 1 in 64, and that it has in one year risen to 1 in 14.  The
average of these fifteen years is about 1 in 31⅓; and this is the
state of things we have now to contend with, one sufficiently grave
to demand our immediate attention; nor let it be said that this is
an accidental epoch of exaggerated zymotic poisoning, and that if
we have patience matters will be restored to their former less
alarming rate of mortality.  Fifteen years is a sufficient period in
all conscience to test whether an epidemic is temporary or per-
manent in its nature, and we must not conceal from ourselves
that, comparing the epochs, the death-rate increases in a fearful
ratio.  If you will cast your eye along the table it will give
you at a glance the longest duration of these endemic hauntings
to which the hospital has been liable since its foundation.   Observe
where there are two figures in place of three, and you will thus
arrive at a rough result.  From 1761 to '65 was one of these,
again, from 1767 to '70, and from 1772 to '74.  From this year
down to 1800 we meet only an occasional unhealthy year, but it
remains at two figures until 1804, and so on with only an occasional
unhealthy year until 1818, the most crowded state the hospital ever
was in; in that year there were 3,539 deliveries.  For three years
the mortality then rose to 1 in 44; in 1826 it arose again, and
continued for the next four years at 1 in 50.  It returned to a

state of unexampled health for the next four years of Dr. Collins's mastership, the deaths averaging 1 in 186, so much so that my lamented friend was in great hopes that by the system of ventilation, purification, and separation he had so strictly established, he had obtained the key to its annihilation from the institution. I succeeded him in the charge of the hospital, having been his assistant, and co-operating with him in carrying out all his plans. But, alas! I had too soon to learn that all his plans and precautions were unavailing to stop this fearful malady. The metria attacked the hospital in 1834, and from that year to the present hour, that is, a period of thirty-five years, only on seven occasions, namely, 1842, '44, '46, '50, '51, '52, and '53, have the proportions amounted to three figures. In my seven years' mastership, one year of which I never was without metria, notwithstanding every precaution (with experience gained in working Dr. Collins's system with himself) my gross mortality amounted to rather less than 1 in 61. This mortality was fearful enough, but when we state that out of the 18,906 patients delivered in the hospital for the last fifteen years 603, or 1 in $31\frac{1}{3}$ have died, and that under the ablest superintendence and the most assiduous care, then, I affirm, there is clear convincing evidence that there is a something so defective and objectionable in the system of the hospital itself, that not a moment should be lost in correcting it in the manner that experience, science, and observation best dictate.

But let it not be supposed that we look upon the result of Lying-in Hospital practice in this city as the most fatal to be found; on the contrary, it is one of the least fatal of the great Lying-in Hospitals throughout Europe, showing that not to the want of skill and talent is due the fearful mortality upon which we dwell, but to an inherent defect of the gravest character in the system or construction of these institutions, and one that baffles human ingenuity to correct as long as they continue to be constructed upon their present vicious and faulty plan.

We shall, in proof of this position, now give a few statistics upon the Lying-in Hospitals generally, and request your close attention to the figures and the rateable mortality in reference to the size of the hospital and number of patients cohabiting:—

### Large Hospitals.

|  |  |  | Mortality. | | Deliveries. |
|---|---|---|---|---|---|
| Liverpool, | . | . | 156 patients | 1 in | 99 |
| London Hospitals, all, | . | 2,000 ,, | 1 in | $77\frac{1}{2}$ |

|  |  |  |  | Mortality. |  | Deliveries. |
|---|---|---|---|---|---|---|
| Coombe, | . | . | . 404 annually | 1 | in | 72.25 |
| D'Barnes' several Continental |  |  |  |  |  |  |
| Hospitals, | . | . 14,253 |  | 1 | in | $56\frac{3}{4}$ |
| Glasgow, | . | . | . 352 | 1 | in | $54\frac{1}{2}$ |
| Dublin, | . | . | . 1,334 annually averages | 1 | in | $31\frac{1}{3}$ |
| St. Petersburg Midwives' In- |  |  |  |  |  |  |
| stitution, | . | . 1,714 annually |  | 1 | in | $26\frac{2}{7}$ |
| St. Petersburg Hospitals, | . | 1,715 annually |  | 1 | in | 22 |
| Vienna, 1838, | . | . 4,453 annually |  | 1 | in | 25 |
| Paris Gen. Hospitals, 11, 1862 |  | 433 or 4,764 in 11 Gen. |  |  |  |  |
|  |  |  | Hospitals, | 1 | in | $18\frac{1}{2}$ |
| Paris, 1862, . | . | . 2,204 |  | 1 | in | $18\frac{1}{2}$ |

### Cottage Hospitals.

|  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| New Ross, | . | . | . 30 annually, total 924 | 1 | in | 185 |
| Waterford, 23 years, |  | . | 115 annually | 1 | in | 295 |
| Limerick, | . | . | . 367 | 1 | in | 367 |

We shall now give the statistics of the maternities which supply home attendance in midwifery cases, as furnished by Mr. Simon, and with which you are rendered familiar by Dr. Phelan's elaborate and convincing pamphlet, to which I beg to call your strict attention.

|  |  |  |  |
|---|---|---|---|
| Royal Maternity, London, | . | . 18,751 in 5 years, | 1 died in 334 |
| St. Petersburgh, reported by D. |  |  |  |
| Hugenbeyte, | . . . | . 207,582 in 15 years, | „ 143 |
| Glasgow Lying-in Hospital, patients |  |  |  |
| attended from | . . . . | 729 in 2 years, | „ 73 |
| Coombe Lying-in Hospital, patients |  |  |  |
| attended from | . . . . | 4,473 | „ 223 |

This statistical part of this report cannot be better summed up than in Dr. Leon Le Fort's calculations and words:—

"Of 888,312 women confined in maternities or hospitals, 30,594 died; and of 934,781 deliveries effected in the towns, 4,405 were followed by death. The mortality was, in the first case, one woman out of 29 confined; in the second it was only one out of 212 cases, but Mr. Leon Le Fort's three essential parts or propositions ought to be written in gold—they are as follows:—

"The women who are confined in hospitals and maternities, not only die there in much greater numbers, but die in quite unusual proportions compared with those who are confined in their own dwellings.

" The cause of this frightful mortality must be attributed to puerperal fever, and it is by contagion that this destructive scourge exerts its ravages.

" It is absolutely necessary to take serious hygienic measures, and if the malady cannot be prevented from breaking out, it is however possible to impose barriers to it, and to say ' Thou shall go no further.' "

The capricious occurrence of metria is proverbial, in so much so that no hospital physician can calculate for any length of time upon a healthy state of his hospital continuing. This is perfectly true; yet there are precursors that cause the physician of experience much anxiety, and lead him to dread an outbreak. The first of these is the occurrence of other zymotic disease, either epidemically in the city or more particularly in his own institution. Typhus fever, scarlatina, and erysipelas, are those diseases that especially attract his notice, and the history of the Lying-in Hospital, as well in my on time as subsequently, has corroborated the fact that the appearance of these diseases, but particularly of scarlatina, is a fatal prognostic, and should put us at once on our guard. When such cases come into hospital they should be immediately removed to contagious hospitals, if this be possible, and if not separated and isolated, allowing no intercourse whatever with the atmosphere or occupants of the other parts of the building. The number of patients should be limited in admission, and if the disease shows itself the hospital closed altogether for a time.

Another precursor to the outburst of metria is the occurrence of bad recoveries after labour, particularly if operation, or manual interference had been necessary. This state may go on for some time, and that without a death occurring. When the hospital physician meets this threatening aspect of affairs let him adopt the same precautions just insisted upon in zymotic disease occurring; but above all, that of lowering the number of admissions or shutting up the institution, as, most assuredly if he do not, the outburst will speedily be upon him.

Prop. 6.—The proposition that metria is contagious is one that I am just as well satisfied of as that typhus or erysipelas is contagious, whilst it is not so markedly so as scarlatina, measles, or small-pox, I freely admit. The occurrence of the sporadic cases of this disease, leaving no possible trace by which they can have spread by contagion from another parturient female has, no doubt, given rise to, and confirmed the idea of, its non-contagious nature;

but exactly the same thing may be said of typhus fever and erysipelas. They occur no doubt sporadically, but will any one deny their spreading by contagion?

I doubt not, however, that many of those cases which we called sporadic cases of puerperal fever were cases of traceable contagion in which the contagium was carried from another case similarly effected by the medical attendant or nurse-tender.

I recollect being very much struck with the evidence afforded of this fact in the case of a most assidious and indefatigable physician who was sent over by his Government from the North of Europe to study under me at the Lying-in Hospital. He was with me during one of the earlier outbursts of puerperal fever, when it became necessary to partially close the hospital and attend patients at their own homes. This gentleman was not remarkably attentive in exercising that virtue which is said to be only second to Godliness. He never appeared to change linen or woollen habilaments, and absolutely lived in a shaggy pilot coat by night and by day. He was so unceasing in his duties that he attended two patients for every other pupil's one; but the unhappy part of it was that I traced him through his rounds of duty like the pale horse in the Apocalypse, and the fatality attending his steps was such that I was obliged to request him to desist from visiting patients at their homes when the proportion of cases sensibly diminished.

But the onus of proving this carrying of puerperal fever about does not rest with my northern friend. The same has often occurred with practitioners extensively engaged in midwifery practice. We have known of such who were obliged (for their own peace of mind and from conscientious feelings) to retire for a time from midwifery practice, or absent themselves from the neighbourhood. But the remarkable feature in some of these cases was, that whilst the disease haunted such practitioners as their shadow, the practice of most of the other practitioners in the same district was unattended by it. Whilst it has been my duty to see a large proportion of the cases attacked with metria in consultation occurring in this city, the proportion of them occurring to myself when I was engaged in midwifery practice, as already stated, only amounted to about one in 1,200; and of this I have not the slightest doubt, that this small proportion was due to the fact of my early conviction of the disease being contagious, and my having acted always upon this conviction. In fact, I never went to a parturient patient after visiting a case of metria or other

infectious disease without taking all the precautions I should have done in a case of scarlatina or small-pox, such as ablution and change of dress.

I admit it was troublesome, and often put me to serious inconvenience. Nevertheless I ascribe to this freedom from much painful afterthought; and it is, in my conviction, a practice that no matter what a physician's opinion may be on the subject of contagion, he is not only not justified in omitting but highly culpable in neglecting.

It is all very well for a physician to form an opinion upon an abstract proposition of this or any other kind, and maintain it sturdily too; but for him to test it by exposing his patient to what a large proportion of his professional brethren believe to be almost certain death, is another and a much graver question, and one which, in my mind, don't admit of one moment's argument.

But if our views of a common poison be confirmed, many of these cases that we have hitherto esteemed sporadic may have been due to contagion, as hitherto little precautions have been taken by medical practitioners in separating zymotic diseases from parturient females, or in going from one to the other themselves, and possibly thus carrying the disease along with them.

Again, the practice of having lying-in patients in general hospitals, as they have in the Hôtel Dieu and in other hospitals in Paris—a practice productive of enormous mortality and most reprehensible in every way—goes some length to explain upon our views of the disease, not only the true nature of what has been termed sporadic metria to be contagious, but also the enormous fatality where this practice is adopted.

It having been fairly established by what has preceded that metria stands in relation of effect to cause with other zymotic diseases and crowded hospitals; how could a more mischievous and destructive plan be adopted than putting parturient females into general, and more particularly surgical hospitals, where the special traumatic element is developed?

In asserting the non-contagious nature of metria, the last argument, that based on its sporadic nature must yield, if the principle of poisoning by self-contamination be admitted as here, the contagium is just in operation the same as if the patient to be contaminated were placed for the purpose in the same ward with one stricken. And this is not dwelt upon merely as a nice point of the principles of medicine. It is purely practical in its bearing—a

point which the admitting can produce no evil, but good—as at once we are led to inquire why this self-poisoning should occur in some cases and not in others.

In my own cases of sporadic puerperal fever already alluded to, the condition of the patients' chambers assimilated to that of the lying-in hospitals. The atmosphere was sensibly loaded; cleanliness and ventilation were comparatively less attended to, and the atmosphere was charged with exuviæ. Now this fact is not dwelt upon as implying that a want of cleanliness or neglect of the necessary precautions, such as removal of the excretions, foul linen, or attention to ventilation, could be chargeable to the lying-in hospital; on the contrary, I know that the reverse was the case, as well in my own mastership as in all those subsequent. But with every precaution that can be used in these respects, every hospital physician and surgeon knows that a loaded state of the atmosphere exist necessarily in a ward more or less crowded with patients. Nay, that to the ordinary visitor effluvia are quite perceptible, and even effluvia varying in their character are detectable by the visitor gifted as I am with an unpleasantly acute sense of smell. In fact, I never could mistake the special odour of the lying-in hospital labour wards, or fail to distinguish it from that of a surgical hospital ward.

We all recollect when cholera was pronounced non-contagious, and when those who were hardy enough to resist the popular current upon this subject were, if not carried away and overwhelmed by the flood, at least half-stifled and choked by its brawling turbulence. Reason has at length had her sway. The simple and conclusive evidence of its growth in gatherings, its zymotic origin, and its spread along the lines of human traffic, have at length been listened to; and the hardy supporters of contagion who have, like myself, survived the hubbub and turmoil, remain with their belief in the doctrine unshaken, nay confirmed by the buffeting it has undergone.

As to metria, I should place it in its degree of contagion, in the same category with erysipelous and typhus fever, and rather more so than cholera.

The seventh and eighth proposition we shall, for brevity sake, discuss together.

Its endemic nature, and its prevalence in a given hospital, or the wards of the same hospital, are self-evident facts from what has preceded; and in dealing with the subject of endemic and contagious

disease, I imagine much confusion has arisen from the attempt to create " a distinction without a difference."   It cannot be denied that in endemic and epidemic disease, a physical entity or influence is present in the atmosphere, whether of the room, the house, the street, or the district, of a peculiar character, which produces a certain effect or train of symptoms, recognizable by us as ascribable to this endemic or epidemic influence.   What this is has, hitherto, escaped our detection.   Just as is the case in whooping-cough, measles, cholera, typhus fever, so it is in ague, metria, and influenza; accepting, as we may, the three latter as the best types of endemic and epidemic diseases.   The fact of its being necessary to breathe the same atmosphere as that breathed by the whooping-cough sufferer, and to inhale the exhalations emanating on swampy localities, or to reside in the district visited by an influenza, does not alter the necessity of imbibing into the system, either by respiration or contact, a physical principle which acts as a poison, and, of course, this cannot be imbibed unless it exist, consequently it reduces the matter at the last to a poison or influence operating necessarily by contact; and thus all these modifications must come to be considered as contagious, and due to contagion.

My convictions upon the view of the endemic disease have long been confirmed by what I observed in the attacks of puerperal fever haunting certain wards in the lying-in hospital.  This was especially the case with what most of my hearers will know as No. 11, with No. 10, and with No. 8, but particularly with No. 11.   No. 11 consists of three small rooms in the old brick building, two of about eighteen by sixteen, and one about twelve by fifteen, communicating with each other, and containing about 3,400 cubic feet of atmospheric air; in these there were nine beds.   Now, this ward was so subject to the disease, patients in the epidemics having been attacked in a proportion so much larger than the other wards, that I passed it over in its rota of receiving patients, and kept it empty—paying at the same time every attention to painting the wood-work, whitewashing the walls and ceiling, scouring, with chlorate of lime solutions the floors, and washing, with the utmost assiduity, the bed-clothes, the nurses' wearing apparel; and obliging the nurses, wardmaids, and pupils to attend to ablution—a difficult duty I confess.   Yet, on opening the ward, again and again the disease showed itself, until at last, on one occasion, I shut these wards up for six months before allowing new patients to enter them.

The same fact is observable in the lurking poison of scarlatina—

that most tenacious of all poisons to its habitat. I recollect a house in Mount-street, in this city, that was in the habit of being let furnished, and on three occasions, the last at an interval of twelve months from the preceding occasion, I had patients up from the country for their confinement, and members of their families, attacked in it with scarlatina. Nor can I easily describe my vexation on my being summoned to this house when it was too late to correct the mischief.

Now before leaving this subject it is right to mention that although I have not myself met fatal puerperal fever occurring epidemically in my own private practice, many other physicians of large experience have; and I have seen, in consultation, a larger proportion of such cases at a time when it was notorious that bad recoveries occurred in this city and neighbourhoood than at others, ascribed to the epidemic prevalence of the disease.

Does not this, it may be said, go a great length to combat the contagious theory, and to disprove the greater hospital mortality— no such thing; it rather confirms both views if properly understood. Can any person of observation doubt for one moment that influenza is epidemic, endemic, and contagious. Witness its almost universal prevalence at times in whole districts. Again, its prevalence amongst all the members of a household in isolated cases; and lastly, the frequency with which a sociable friend carries it home from a visit of comfort to his suffering neighbour, or what is more conclusive and less pardonable, how frequently the benevolent man walks in to pay a friendly call to his neighbour when he ought to be nursing it in his chamber—and imparts a month's torment to him in communicating rapidly the news of the day. Can any person doubt that if it was our habit to live in common homes influenza would not be *universal* instead of prevalent as it is at present? Or can it be doubted that scarlatina even when epidemic does not become a scourge when it gains admission to Eaton, Harrow, or Rugby?

In fact, the conclusion practically to be drawn from the epidemic tendency is that the fact of this predisposition existing renders it the more imperative to avoid congregating those liable to zymotic disease and puerperal fever in particular, as it adds immensely to the likelihood of its occurrence and spread where the two influences co-exist.

We shall not recapitulate what has been stated in the earlier part of this paper about the comparative security to life of those

delivered in their own homes, however humble they may be, as compared to those delivered in large hospitals. This fact is now so firmly established that it were only an insult to my hearers to dwell upon it.

Let us now see what the results are under a system of proper management in the housing of poor women in their trying period. Mark me, gentlemen, I say proper management in housing—in nothing else do I presume to call in question the management.

The housing that we venture to bring under your notice in contrast with that of the great hospitals, which I have so unhesitatingly condemned, is that adopted so successfully in the smaller towns in Ireland; and we shall rest satisfied with giving you simply the statistics of three of them which have been carefully kept.

Their success depends upon only having one or two patients in the hospital wards at a time, as their treatment in all other respects appears to be the same as that in our larger hospitals.

In New Ross, of which there is a published report for 30 years, to 1839, the total admissions were 924, or over 30 in each year, and the deaths were only 5, or 1 in 185.

In Waterford, of which we have the report published by Dr. Elliott, to whose exertions to draw attention to this matter we owe so much. His report reaches from 1838 to 1868, 30 years, in which period 3,534 deliveries occurred. The gross mortality in it has been for this period 1 in 288, and the mortality from puerperal fever only 1 in 328.

In the Limerick Lying-in Hospital, however, the success was even more marked of the small hospital system, as it only gives 1 death in 367.

Dr. Elliott, who I am proud to claim as an old pupil of mine, puts the question under discussion so simply and so conclusively, that I must be permitted to quote the paragraphs referring to it from his report of 1868.

He describes his cottage hospital as " a small house rented for the purpose, in an elevated and airy part of the town.

" Of this house, only two rooms were available for the occupation of the patients. One was a very small room, in which were two narrow couches or beds, on which the patients were delivered; and the second, a larger room, in which were eight beds. Into this last-mentioned apartment the patients were removed at the end of some hours after delivery, and they continued to occupy it during

their stay in the hospital. This larger ward was lighted by three windows with a louvred pane in the upper sash of each. The door was removed from its hinges, so that the entrance was rendered a mere door-way, necessarily open at all times; the bedsteads were plain iron couches, very roomy, but devoid of tester, curtains, or valance of any kind; the beds were of straw, inclosed in a sack or ticking, and changed for each patient.

"Into this hospital 753 women were received and delivered between March, 1838, and October, 1844, a period of six years and six or seven months. Of these, six died, three of the deaths being the result of puerperal fever in one or other of its forms, thus giving a total mortality of 1 in $125\frac{1}{2}$, being a per centage of 0·79 or 4-5ths nearly; and a mortality from puerperal fever of half the amount, viz., 1 in 251, or 0·39 per cent.

" In October, 1844, the hospital was removed to the house which has been in continued occupation to the present time. This house is less favourably circumstanced as to its surroundings than was the former. It is situated in a narrow street, about 25 feet wide, in a poor and rather densely inhabited neighbourhood, and the ground on which it stands is rather low.

" It consists of six rooms. On the ground floor is a board-room to the front, and behind it a kitchen; on the first floor a small apartment to the rere, in which are two delivering couches ; and to the front, an apartment or ward in which are four beds for the reception of patients after delivery, and during convalescence.

" On the upper or second floor are also two rooms; one to the rere occupied by the resident midwife, and another to the front, in which are four beds for the reception of patients.

" Each of the wards, in which are four beds, is lighted by two windows, with a louvred pane in the upper sash of each. The door of each is removed from the hinges as in the former hospital; and the bedsteads and bedding as before. Behind this house or hospital, if it be worthy of that appellation, is a small yard, in which are a wash-house, ash-pit, privy, and house for the storage of straw, but the drainage and sewerage are by no means perfect. These details, which may appear to some tedious or trifling, are given, because a knowledge of them is necessary for a due appreciation of the results.

" Into this hospital, from October, 1844, to this day, that is, during a period of twenty-three years, there have been received and delivered 2,656 women. Of these nine have died, two of that

number of puerperal fever in the form of puerperal hysteritis, being a total mortality of 1 in $295\frac{1}{9}$; or a per centage of deaths of 0·33, and a mortality from puerperal fever of 1 in 1,328, being a very small fraction indeed.

"It will have been seen that in the first hospital, where two apartments only were devoted to the immediate use of the patients, eight beds were grouped together in a single ward; and that in the present hospital three apartments are available for their use, so that the same number of beds is divided between two wards; and it will be noticed, as a significant fact, that whereas the mortality from puerperal fever was, in the first hospital, 1 in 251, during a period of six years and six months, the mortality from the same cause has been, in the present one, only 1 in 1,328, during a period of twenty-three years.

"In this, as in larger hospitals, and especially in lying-in hospitals, the number of patients together under treatment has varied greatly; there have been occasions when all the beds were occupied at the same time; and once or twice it has been found necessary to receive even more than the proper number; generally there have been only one, two, or three in hospital at the same time, and not unfrequently the hospital has been for some days, or a week, or even longer, completely empty."

What practical deduction do we arrive at from what has preceded?

That by the system of large hospitals certain death results to a much greater number of patients than when admitted to small, or when confined in their own homes.

Whatever question may arise as to the accuracy of the statistics in patients delivered at their homes, none occurs in the well-authenticated reports of the small hospitals, that does not exist equally in the case of the large. We shall, therefore, limit our comparison to the great and small hospitals. Let us then take first the three small hospitals :—

> Mortality in New Ross is 1 in 185
> ,,        Waterford   ,,    295
> ,,        Limerick    ,,    367
>                              ———
>                              840

The mean of these three is 1 death in $282\frac{2}{3}$.

This, then, is our standard of the proportion of deaths which

occur where women in labour are treated in small hospitals in place
of large.   We are justified in concluding that the general treat-
ment is the same in both, the only difference being the congregating
large numbers of parturients into the same building in one case and
not in the other.   Let us further bear in mind that the increased
mortality bears nearly a direct proportion to the increased numbers
inhabiting each building.   What then are the comparative results
with the small hospitals as our standard?   We shall first take the
larger hospitals in detail.

That in the Liverpool Hospitals, 2 out of 3 die, who should not;
or in other words, the deaths by proper management should be
reduced to *one-third* of their number.

In the London Hospitals, 3 out of 4 die, who should not; or the
deaths should be reduced to one-fourth of their number.

In the Coombe[a] Hospital, 3 out of 4 die (on their present calcula-
tion) that should not; which calculation extends over a period of
the last 7 years, and  the deaths ought to be reduced to one-fourth
of their present numbers.

In the Glasgow Hospital, 4 out of 5 die, who should not; or the
deaths ought to be reduced to one-fifth of their number.

In the Dublin Lying-in Hospital, 8 out of 9 die, who should not;
or the deaths ought to be reduced to one-ninth of their present
numbers.

In the Midwives' Institution, St. Petersburgh, 10 out of 11 die,
who should not; or the deaths ought to be reduced to one-eleventh
of their present numbers.

In the Hospitals generally in  St. Petersburgh 12 out of 13 die,
who should not; and the deaths ought to be reduced to one-
thirteenth of their present numbers.

In Vienna Hospital, 10 out of 11 died who should not; or the
deaths ought to be reduced to one-eleventh of their number.

In Paris General Hospitals, 17 out of every 18 died who should
not; or the deaths ought to be reduced to one-eighteenth of their
number.

In the Paris Lying-in Hospital, or Maternity, 20 out of every
21 died who should not, and the deaths ought to be reduced to less
than one twenty-first part of their number.

[a] As some difficulty occurred in tracing the fatal cases sent out from the Coombe to
the other hospitals, I cannot pledge myself that the death-rate, if taken, for the
Coombe Hospital for the last fifteen years, as in the case of the Dublin Lying-in
Hospital, might not prove different, and perhaps approach more nearly to the figures of
that institution.

Or if we take the mean of the death-rate of the 11 great hospitals as denominated above as one death in 44, and suppose the magic of our eloquence to reach and influence their managers in establishing small hospitals, or properly-constructed huts, instead of their present large hospitals, the saving to human life by this simple alteration would prove immense.

Be it recollected, these poor women flock to these hospitals under the impression that they are gaining a safe asylum in their hour of trial and distress; little do they imagine that they are, in their ignorance, taking a step that adds to their risks of death, in a ratio, at the very lowest calculation, of three to one, and at the highest at 20 to one, against their lives. Shall we then continue to keep these asylums open upon their present faulty principle, when by merely remodelling the great obstetric institutions of this city ample and safe accommodation can be provided for them?

But it will be asked would you absolutely shut up the hospital, and destroy our world-renowned school of midwifery in this city? By no means; I would establish the midwifery school upon a sound basis. I would take the lead, as Dublin has ever done, in this department of medicine, and correct the crying abuses that exist; abuses that may have been excusable when ignorant of them, but which are unpardonable alike in the eyes of God and man when dragged into the light of day. There is no difficulty whatever in the case of the Lying-in Hospital of Dublin in meeting the intentions of the founder by such an alteration of the present system as our increased knowledge of its vices suggests. The correction of these abuses will benefit the medical school of Dublin, and the obstetrical branch in particular.

The intentions of the founder, Moss, would be best carried out by accommodating his great charity to those changes that progress in his art dictates, and which his great mind would have been the first to grasp and the boldest to execute were he now amongst us. Picturesque huts, in the Swiss or Italian style, sufficiently elevated above the ground, could be easily constructed to accommodate as many patients as are at present admitted, and could be built in the high ground in the Rotunda Gardens or elsewhere, or the pavilion system, lately introduced in some Continental and American hospitals, might be adopted.

The large hospital, at present such an ornament to our city, and such a benefit to humanity, through its diseases of female wards, can be appropriated exclusively to diseases of females, the brick

building appropriated as a residence for midwives sent up for instruction from the country, and thus supply the greatest desiderata to our school.

Patients can be more generally attended at their own homes, and appliances, medicines, and even food supplied. In fact, all that is here insisted upon except the isolated huts is, and has been, for years in operation—ever since my establishment of the female disease ward; and all we want is to extend these and add the huts. I long foresaw the necessity of these changes, and have been gradually pressing them on the attention of the governors.

It becomes a trying effort to look on at avoidable loss of human life, when the responsibility of preventing this rests upon our own shoulders. In this painful position have I been for the last 30 years. As a governor and ex-master of the Lying-in Hospital my impressions have been confirmed as to the necessity of the change I now advocate. I feel that, with my knowledge and convictions, silence on this subject would be cruel, heartless, not to say criminal. This feeling of dissatisfaction increases with age and experience; so do our apathy and listlessness. Life runs on apace, but misery and redress of wrong lag. These convictions must plead my excuse for so tardily calling public attention through the influence of our common profession to this great grievance. I have now done what I conceive to be my imperative duty in this matter, and confidently leave the issue in the hands of a profession who have ever made the public good its first object.

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ART. XVI.—*On Traumatic Fractures of the Larynx.* By WILLIAM STOKES, Jun., Surgeon to the Richmond Surgical Hospital; Lecturer on Surgery, Carmichael School of Medicine; Fellow of the Royal Medico-Chirurgical Society of London, &c.

As fractures of the cartilages of the larynx are a class of injuries which so rarely come under the observation of the surgeon, the particulars of the following case of comminuted fracture of the cricoid, presenting features which, I may say, render the case almost unique in the history of these injuries, must doubtless be held to be of considerable surgical value.

On the 22nd of last September, I was summoned to the Richmond Hospital to perform tracheotomy for a female who had just been admitted, suffering from extreme dyspnea, which had come on

rapidly after receiving a kick in the throat from her husband. The account that was obtained from the patient's friends was, that she had a dispute with her husband relative to some money which she had about her, and of which the husband wished to get possession. All persuasion to obtain it from her failing, he had recourse t violence, and threw her down on the floor. On attempting to rise he kicked her on the throat, which had the effect of again prostrating her. I presume that some symptom she had then alarmed him, for he offered her no further violence, and she shortly after rose and stated that she would charge him for this brutal assault. While in the street, looking for a policeman, the dyspnea commenced. It rapidly increased in intensity, and she was immediately brought to the Richmond Hospital. On her admission she was almost inarticulate; there was a cold sweat on her forehead; her pulse slow and weak; her face much flushed, and her lips livid. Her respiration was laboured and difficult, but not so much as to make those about her think that the case was about to terminate so suddenly as it did. I was immediately summoned, and lost no time in getting to the hospital; but on my arrival, I learned that the patient had just expired. I found considerable flattening, and abnormal breadth of the throat. There was no apparent ecchymosis, but much effusion and infiltration among the soft structures were distinctly felt. From these appearances, as well as from the abnormal mobility of her laryngeal cartilages, and also an obscure crepitation, the diagnosis of fracture, with displacement of one or more of the cartilages, of the larynx, was made—a diagnosis which the *post mortem* examination verified. All the soft tissues about the larynx were found profusely infiltrated with blood, although no laceration of a large vessel could be determined; it was more copious and extended further back on the right side than on the left. On taking out the larynx I found that there was a double fracture of the cricoid cartilage. These two fractures were symmetrical, each being situated at about half a quarter of an inch from the middle line. There was displacement backwards and slightly inwards of the left fragment, separation of its articulation with the inferior cornu of the thyroid, and considerable laceration of the crico-thyroid muscle on that side. The displacement of the fractured portion of the cricoid was not observed on the right side. Here, posterior and external to the thyroid and cricoid cartilages, and by the side of the epiglottis, there was a considerable effusion of blood, of itself contributing in no small degree, by its pressure from without, to the closure of the
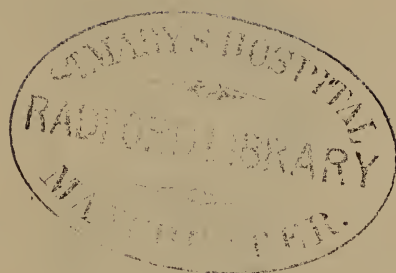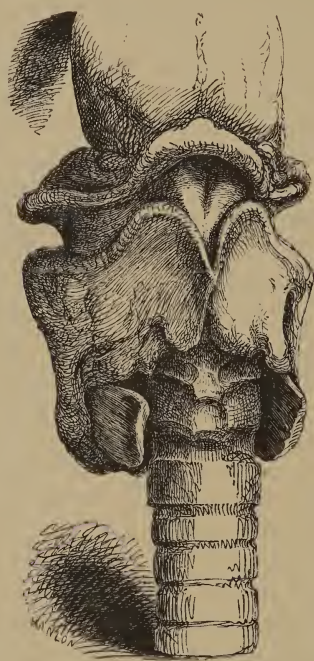
larynx.    The obstruction, however, was chiefly caused by the effusion of blood beneath the mucous membrane of the larynx, especially under the aryteno-epiglottidean folds, and in the ventricles of the larynx, which produced almost complete occlusion of the glottis, and consequent apnea.    There was no laceration of the mucous membrane, and consequently no emphysema.

The occlusion, therefore, was caused by the existence of the four following conditions:—

1. Effusion of blood external to the larynx.

2. Effusion under the lining membrane causing closure of the glottis.

3. Displacement inwards of left fragment of cricoid.

4. Displacement of arytenoid on right side.

The accompanying woodcut is a faithful representation of the appearance the cricoid cartilage presented.

In this case, therefore, we had an injury of the larynx which, as far as I can determine, is unique in its character, viz.: a multiple or comminuted fracture of the cricoid, and also a double displacement, one of a fragment of the cricoid, and the other of the right arytenoid.

It is very remarkable how few recorded cases of traumatic laryngeal fractures are to be found in surgical literature.    M. Cavasse, in whose valuable memoir on laryngeal fractures will be found an exhaustive account of the different characteristic signs of these injuries, gives—excluding the cases of fractures of the larynx produced by hanging, and those of the os hyoides,—the particulars of only nine cases.    In one of them the fracture involved the cricoid, thyroid, and arytenoid on one side; the two others the thyroid and cricoid were fractured and in the remaining six the thyroid alone.    In Sir Duncan Gibb's most valuable memoir on *Diseases of the Throat and Windpipe*, will be found the particulars of three most interesting cases of fracture of the thyroid cartilage, two of which occurred in his own practice.    He also gives the history of a case of fracture of the cricoid, accompanied by the rare complication of emphysema, which Mr. Prescott Hewett has recorded in the first volume of the *Transactions of the Pathological Society of London*. The following is the case as given by Sir Duncan Gibb in the work I have alluded to above:—" A man aged twenty-seven, fell from a scaffold fifty feet high, and although his fall was broken, he sustained various injuries for which he was admitted into St. George's Hospital, under Mr. Cutler's care.    Urgent dyspnea was present, with emphysematous crackling about the root of the neck.    The

latter spread rapidly in the cellular tissue of the upper part of the body, the tongue was swollen and protruded between the teeth, the emphysema spread to the lower extremities, and he died three days after the accident, never having rallied from the head symptoms. The lungs and ribs were sound, but on examining the trachea and larynx the right side of the cricoid cartilage was found to be broken in two places on its anterior surface, a portion of the cartilage two lines in length being thus separated from the other parts. The angles of this fragment were so sharp, that the superior had penetrated through the mucous membrane, producing a jagged opening, the size of a pea, which communicated freely with the cellular tissue of the neck, and gave rise to emphysema. Ecchymosed spots surrounded the vocal cords, and the brain was found extensively lacerated."

M. Cavasse has classified the signs of these injuries into the functional and physical. Among the former continuous dyspnea constituted, in seven out of the nine cases recorded by him, a characteristic symptom; in my case it was extreme, so that in eight out of ten cases it was present. In the two cases in which it was not present, which were recorded respectively by MM. Piedagnol and Marjolin, there was no dyspnea; and it is remarkable that in these two cases, the force which produced the lesion was applied on the side of the larynx, and not immediately in front of it. It is hard to say if this circumstance was accidental or not, but it was one which might possibly be of some importance in a medico-legal point of view. The causes of the dyspnea are—first, sub-mucous effusion of blood; secondly, effusion of blood external to the larynx; thirdly, displacement of the cartilages; fourthly, deformity of the glottis; and lastly, abnormal mobility of the point of attachment of the vocal cords. These are mentioned by M. Cavasse, with the exception of the second, the effusion external to the larynx, which was so well marked in the case which fell under my observation. It was so extensive as to partially displace the larynx to one side.

The second important sign is facial lividity as indicating an impeded respiration.

Another frequent, but not invariable, symptom is alteration in the voice. Sometimes there is complete aphonia, as in the case which came under my observation. In other cases the voice was hardly affected. There is, therefore, great difference in the intensity of this sign, which appears to be due to the varying etiological

conditions producing these lesions, and also to the mechanism of them. From the recorded cases it seems that the fractures produced by lateral pressure, are less liable to be accompanied by aphonia than those produced by force applied directly in front. This is, in truth, what we would expect, as injury to the vocal cords or their points of attachment would not be as likely to follow after the direct application of lateral force, as, in this case, the resistance is so much less than when it is applied directly in front.

The remaining functional sign of these injuries is pain, which also is not invariable, but in some cases is extreme, and may be either spontaneous or be induced by manipulation, by attempts to speak, or by the act of swallowing.

The physical signs of these injuries are—

  1. Alteration in form of the neck.
  2. Increase of volume of the neck.
  3. Abnormal mobility of the cartilages.
  4. Ecchymosis.
  5. Crepitation.
  6. Emphysema (rare).

The principal alteration in the form of the neck is flattening anteriorly, produced by the obliteration of the pomum Adami, in cases—namely, when the force is applied from before backwards. M. Cavasse observes that as yet no one has noticed the change in the form of the neck when the fracture is produced by lateral pressure. The flattening in cases of fracture produced by antero-posterior pressure appears to him to be more marked when the cartilages are ossified. When they are not, the elasticity of the cartilages ought to restore the larynx to its normal form. There are two ways of establishing abnormal mobility—first, by making lateral pressure there is little resistance found in approaching the cartilages of the larynx; and secondly, in passing the fingers down the mesial line a vertical depression is easily perceived. This latter manœuvre indicates much better than the first, the situation and direction of the fracture.

There are in these cases two situations for the ecchymosis. One is subcutaneous, and acts chiefly in producing alteration in form and increase in volume of the neck; the other is deep in the immediate vicinity of the lesion, and may, if very extensive, assist in no small degree in producing dyspnea by pressure on the wind-pipe. These two hemorrhagic effusions never communicate, being prevented from doing so by the cervical layers of fascia.

Another physical sign of great moment is crepitation, which, however, is more often absent than present. Its absence may be due to many causes, among which may be mentioned the fracture being incomplete, the cartilages not being ossified, and also it may be impossible to produce it in consequence of the extensive hemorrhagic effusion immediately external to the fracture. This must necessarily produce considerable difficulty in moving separately the fractured portions of the cartilage or cartilages.

The last physical sign I would mention is emphysema, which is extremely rare. It did not occur in my case, and in only one of those recorded by M. Cavasse. It was a case which was under the care of M. Laugier, one of the surgeons of the Hôtel Dieu. The fracture occurred from a fall down a flight of stairs. The patient was a man aged forty-eight, and was admitted into the Hôtel Dieu on November 20, 1858. Immediately after the accident (9 a.m.) there was considerable oppression of breathing, and at 2·30 a.m. the following morning he walked to hospital. His gait was slow; head thrown slightly backwards; face anxious; mouth open; face pale; lips cyanotic; body covered with a cold sweat; pulse frequent and feeble; respiration stertorous and blowing; considerable aphonia. The oppression increased on the slightest effort to speak. He would not remain in hospital, but six hours after returned with a marked aggravation of all his previous symptoms, and, in addition, the existence of a deep-seated emphysema was easily determined. Shortly after this the patient died suddenly. The *post mortem* examination revealed a vertical fracture of an ossified thyroid cartilage; extensive hemorrhagic effusion; laceration of crico-thyroid membrane; vertical and dentated fracture on right side of cricoid cartilage; fracture of right superior cornu of thyroid cartilage; laceration of ligaments of right crico-thyroid articulation; fracture of great cornu on right side of os hyoides; luxation of arytenoid, and laceration of mucous membrane; ecchymotic effusion in sub-mucous cellular tissue.

The only other case that I will allude to, and that very briefly, is the case which was under M. Maisonneuve's care in the Hôpital de la Pitié, May 10th, 1857. The patient was a young man, aged twenty-four, by occupation a mason, who was thrown down by a dairyman's cart, one of the wheels of which crushed the larynx in passing over the anterior portion of the neck. On his admission he was in a state of semi-apnea, with all the other usual signs and symptoms of an impeded respiration. Apnea was warded off by a venesection, but its good effects did not last; a second was performed, and a

third the day after.   On the fifth day the dyspnea became so urgent that tracheotomy was performed.   The operation, owing to the crushed and flattened condition of the larynx, and the neighbouring soft parts being swollen and contused, was accomplished with extreme difficulty.   The case did very well; but the patient, owing to contraction of the larynx, which became permanent, was obliged ever afterwards to wear a tracheotomy tube.

The successful result of tracheotomy, which was obtained in this remarkable case of M. Maisonneuve, makes it a source of unceasing regret to me that I did not arrive at the hospital sufficiently early to perform the operation, and in all probability save the life of the patient whose case is the theme of this communication.

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ART. XVII.—*Cases of Hemorrhage from the Ears, Eyes, &c.*   By ROBERT LAW, M.D., King's Professor of the Institutes of Medicine; Physician to Sir P. Dun's Hospital; and Consulting Physician to the Adelaide Hospital.

THERE are few subjects connected with pathology more interesting, more important, and we would add more curious than the vicarious or supplementary hemorrhages that occur with females, and through which nature seeks to relieve the system in case of suppressed or insufficient menstruation.   The points of especial interest connected with the subject are the situation of these hemorrhages, their extent, and the frequency with which the most important and most delicate organs are their seat, without eventually sustaining any permanent injury.

While it often happens that a physiological relation exists between the seat of the hemorrhage and the organ from which the suppressed or diminished discharge should come, this is not always the case.   While there are few if any organs of the body that have not been the vicarious outlet of this discharge, it appears to exhibit an especial predilection for a weak or suffering organ.   We often tremble for a delicate female the subject of extensive hemoptysis, or rather pulmonary hemorrhage occurring at the period that may be said to be the crisis of the constitution, and especially should the subject inherit a phthisical tendency.   Although there be substantial grounds for alarm and anxiety for the future of such a case, yet we have often seen such escape unhurt, and attain to perfect health.

While the lungs and the stomach are the organs from which these hemorrhages most frequently proceed, yet the cases which we are about to detail show that other organs also share in this tendency.

Some years since I brought under the notice of the Association of the College of Physicians, a case of vicarious hemorrhage from the ears, and which Dr. Churchill considered of sufficient interest to give it a place in his valuable book on midwifery; but as the abstract which I supplied him is not very full, and as there is no other record of the case, perhaps I may be permitted to advert to it in order to compare it with another with which it has some points of resemblance and some of difference. The subject of the case, Mary Murphy, aged twenty-one, was admitted into Sir P. Dun's Hospital, complaining of violent pain of the head, which she ascribed to her having stopped too long in the sea when bathing. On the night of the day of her admission into hospital, she bled and largely from both ears. She complained of pain in each ear of a distressing sense of fulness which she felt in her head generally, the temporal arteries beat strongly, the face was flushed, while she said her feet were cold. The menstrual discharge had been suppressed for several months, during which she had all the symptoms of which she now complained, but in a less degree, and without the bleeding from the ears.

We directed leeches to be applied behind each ear, that she should have foot bath, and aloetic purgative medicines. These means relieved her, but she bled again from the ears on the third night. We continued the same means, but in addition had leeches applied to the interior of the thighs. The indications of treatment, which we steadily held in view, and upon which we acted, were to divert from the head and to determine to the uterus, and at the same time to strengthen the constitution.

She was a considerable time under care, and it must be confessed we had but little to boast of as to the success of our treatment, only that the intervals of the bleedings were prolonged, but there was no appearance of the return of the menstrual discharge. The hemorrhage from the ears, which occurred frequently, was always announced by an unusual sense of weight in the head, pain of the ears, and throbbing of the temporal arteries, flushing of the face, and coldness of the feet. Although the head was much relieved by leeches and warm foot baths, still she said that this relief was nothing compared to what followed when she bled from the ears.

While her feet were constantly cold, her face was as constantly hot and flushed, and during her stay in hospital, which was many months, she had on three different occasions erysipelas of the face. She had one very profuse discharge of blood from the ears, and after it seemed to improve so much that I advised her to leave hospital, hoping that she would be benefitted by a change, although not expecting much while the menstrual discharge was not restored.

She left the hospital, but was not long out when she got hematemesis, of which she had repeated returns, with occasional bleedings from the ears.

She first came under my care in June and left early in December; she was re-admitted into hospital on the 1st of the following month, and between this and 27th of April she bled twice from the ears, and discharged repeatedly from the stomach large quantities of dark grumous blood. The other symptoms then present were violent headache, severe darting pain in right ear, with pain between her shoulders and across the loins. On the 9th of June, these symptoms were much aggravated, and on the evening of that day she had a more copious hemorrhage from the ears than she had ever had; her sheets were literally soaked in blood. She now told us that she had had, as nearly as possible about a month since, a slight appearance of the menstrual discharge.

She now became affected with diarrhea attended with violent pains through the bowels, which only yielded to large doses of opium often repeated. Her health now improved considerably, and for six weeks before she left us she had no discharge of blood of any kind. She ultimately got quite well, but not until the menstrual discharge was restored.

Mary Anderson, aged thirty, servant; unmarried, a stout, strong made woman, was admitted into hospital complaining of distressing soreness of her stomach, and pain in her left shoulder, and extending down the arm, which was rigidly flexed, and the least attempt to move it caused great pain. Pulse 54, with respiration short, hurried, and nervous, jerky—face flushed. She exhibited a peculiarly nervous, frightened appearance. Just before her admission into hospital, she discharged a large quantity of blood from the stomach. She states that five months before this, her illness began with pain in the left shoulder, extending through the arm, and even to her fingers. At the same time she had pain of the stomach, and constant vomiting. She was ill a month when she discharged from the stomach a large quantity of blood. She

was now carried to bed in a fainting state, and did not leave it for two months, during which time her arm became swollen and powerless, and very painful. She now got better, but the amendment did not last. She was seized with the vomiting of blood, which caused her to be removed to the hospital. She observed that the vomiting of blood returned every month, and that the menstrual discharge, which occurred at the same time, was regular generally both as to time and quantity. Leeches were applied to the shoulder, and relieved it, and she was ordered such medicines as her nervous symptoms indicated. She had been five days in hospital when the report was, her nervous symptoms are much less, respiration more natural, pain of arm less, but she complains of pain and stiffness in left leg. She also complains of pain along the spine, between the shoulders and loins. She was admitted into hospital February 12, and on the 21st she bled from the *eyes*. She complained much of sickness of stomach, and stiffness of left leg. The left arm much less stiff, respiration much more natural and free.

23rd.—Has considerable pain in left popliteal space and groin, the vein all along the leg has a corded feel and is painful, especially in popliteal space and groin. Leeches were directed in the course of the vein, and stupes.

27th.—The arm is quite free, the leg still painful, and vein hard and corded, particularly near the foot, the dorsum of which is swollen and painful; face flushed, eyes suffused.

March 2nd.—Has bled very much from right eye. The vessels of both conjunctivæ very much congested. Condition of leg improved, less stiff, and less painful.

3rd.—Has a peculiar nervous tremor of the eyelids.

5th.—Menstrual discharge now present; had epistaxis this morning.

9th.—Bled again from the nose.

10th.—Menstrual discharge has now ceased, having continued five days. She complains of numbness in leg.

25th.—Is much stronger, and has more use of leg. Has had slight epistaxis, which relieved a feeling of weight in her head.

31st.—Again complains of pain in left shoulder; has copious lachrymation, and a serous discharge from the ear; skin bathed in profuse perspiration.

April 1st.—Bled a little from the eyes.

2nd.—Menstrual discharge now present.

5th.—Menstrual discharge has ceased.

May 11th.—Since last report, has been gaining strength, and feels herself quite well, except that the left leg is not strong, and makes her a little lame.

This case differs from Murphy's in this remarkable particular, that while in the latter there was complete amenorrhea, in the former this discharge appeared normal both as to time and quantity, and still this quantity did not seem to satisfy the system. There was besides the hemorrhage from the eyes, the epistaxis hematemesis, a serous discharge from the ears, profuse lachrymation and profuse perspiration; and that these hemorrhages bore some relation to the menstrual discharge would appear from their coming on at the same time as the menstrual discharge. In Murphy's case there was the bleeding from the ears, the hematemesis, and diarrhea. I should also place with these the erysipelas of the face as having a relation to the other symptoms.

Everything connected with Anderson's case bespoke aggravated hysteria. It exhibited to us a remarkable instance of what is often observed in hysteria, the interruption to the normal ratio of the respirations and pulse, the former so much exceeding the latter—as first noticed by Dr. Elliottson. The hurried, short, jerky respiration, auscultation not detecting the entrance of any *air* into the lungs, was characteristic. The painful and swollen condition of the upper extremity, and on its being relieved the affection of the lower extremity in the form of phlebitis, are interesting epiphenomena, and reminded us, in the case of the affection of the lower extremity, of what not unfrequently comes on in the course or towards the termination of fever which has been attended with nervous symptoms—not very unlike phlegmasia dolens—but which occurs in men as well as in women, but more frequently in the latter (independently of the puerperal state), from their greater nervous susceptibility.

The records of medicine furnish us with cases of hemorrhage both from the ears and eyes, but they are few. We had expected to have found them noticed by Frank in his very full observations, "de profluviis cruentis," but there is no mention of them there. He seems, however, to have got a glimpse of the vaso motor functions of the nerves, and regrets that the subject has not had the measure of attention bestowed upon it that its importance entitled it to. He remarks, "*nervorum qui arterias venasque circumdant comitantur ac subeunt si paucos eosque notabiles magis ramos excipiamus adhuc languet historia.*"

I have little doubt but that when our knowledge of the influence of the vaso motor nerves has increased, we shall then and there find an easy explanation of many of those strange phenomena which are met with in hysterical affections, as well as in others of a nervous character.   We observe this influence very strikingly in various cutaneous affections, as in herpes zoster, whose dependence on the nervous system is now generally admitted.   We conceive ourselves warranted in regarding the erysipelas of the face, which occurred three times with Murphy while under our care, as more than a mere accidental complication, and that it bore a certain relation to the hemorrhage.   In the same light we regarded the lachrymation and profuse perspiration in Anderson's case, in which nature was not alone not satisfied with the menstrual discharge, which appeared normal both as to quantity and as to the period of its coming, but required besides the discharge of serum from the ears, of blood from the eyes, stomach, and nose, and further still, this profuse lachrymation and perspiration.   Perhaps we may be warranted in looking upon the diarrhea that occurred in Murphy's case in the same light as supplementary to the hemorrhage from the ears and stomach.   As regards the connexion between cutaneous affections and certain conditions of the nervous system, we have had an illustration of it in the person of Margaret Gibney, now about thirty years of age, who has been under our care on various occasions for many years for hysteria assuming various forms.   On the occasion to which we especially allude she complained of extreme sensibility all along the spine, and pain when it was touched.   There was hyperesthesia of the abdomen, and on the surface there were numerous bullæ of pemphigus, which were also on the legs and feet.   We have already noticed this superficial hyperesthesia in connexion with hysteria, and exhibiting itself in the very short time a blister produced its effect.   The subject was a lady who had been delicate from the age of fourteen, especially affected with headache.   She was highly intellectual, and had a great thirst for knowledge; the too keen pursuit of which evidently injured her health.   She married, and was the mother of many healthy children, but was never strong; she had illnesses at different times, and all, as far as we could learn, marked with nervous symptoms.   While under our care she exhibited hysteria under so many diversified shapes, that we might well say " *quo teneam nodo, mutantem Protea vultus.*" She was blind for two days.   At another time there was a distinct abdominal tumour, so solid to the hand that we could hardly believe

it to be what is designated a phantom tumour; but its speedy disappearance proved this to be its real character. In three days we sought for it in vain. The pain in the shoulder and arm, in Anderson's case, and speedily leaving these parts and affecting the lower extremity of the same side, reminded me of Sir B. Brodie's cases of hysterical neuralgia—cases which that eminent surgeon admits perplexed him very much at first, and which he candidly says he is not quite sure he treated quite rightly. We considered these cases of sufficient interest to bring under the notice of the Association of the College of Physicians at one of their evening meetings, when it was observed that some of these hysterical affections were more real substantial organic affections than they often appeared. To this I readily assented, and illustrated it by a case of a young woman, Eliza Warren, aged thirty, who had often been under my care for hysteria under various forms. At one time she had hemoptysis, and to such extent as to make us regard it as the forerunner of phthisis pulmonalis. At another time she had such profuse metrorrhagia as to excite suspicion of organic disease of the uterus. These hemorrhages, however, passed away, leaving the organs from whence they proceeded apparently unhurt. On another occasion she became my patient under a new form of her disease. She had been spending the evening with friends, and returning home, in the street, rather late, she was laid hold of by a soldier, from whom she with difficulty extricated herself, and ran home, which she reached much exhausted. Next day she was brought to Sir Patrick Dun's Hospital in a state of nervous excitement, which was much increased by her utter inability to speak. She tried to explain her case, but to no purpose. Her tongue was forcibly pressed against the roof of the mouth. She literally could not utter a word. Her other symptoms bore so close a resemblance to those nervous symptoms that she exhibited on former occasions that we expected the same results from the same treatment. We accordingly directed for her valerianate of zinc, camphor, ammonia, &c. However, all these remedies failed. We then thought of giving her mercury with caution, and directed that six grains of calomel should be divided into twelve parts, and that one part should be taken every second hour. It only required the six grains of calomel to affect the mouth and produce profuse salivation. Immediately her tongue became perfectly free, it was no longer pressed against the palate. The only impediment now to her distinct articulation was her sore mouth, which was, indeed,

very sore. She now got tonic medicines, and after a month's sojourn in the hospital, she left quite recovered. It may be urged that I am scarcely justified in inferring from the recovery of the speech, immediately upon the mouth becoming affected with the mercury, that the one was the effect of the other, that it might have been a mere coincidence, and that a single case would hardly warrant our assuming that it was an organic lesion yielding to mercury, without further confirmation. Such, however, was afforded us by the same person becoming again similarly affected, and being similarly treated, and with precisely similar results. Some time after she had left the hospital, having recovered her health, she engaged in service, in which she had not been long when she again became ill as she had been before, with the same loss of speech. She was now sent to another hospital, where there was nothing known of her previous history, in consequence of her incapability of communicating it. She remained in this hospital for seven months, and underwent a great variety of treatment, but with no benefit, at least as far as regarded the recovery of her speech. She left the hospital by stealth, and came to Sir Patrick Dun's. As she was affected exactly in the same way that she had been before when under my care, I now ordered for her five grains of hydrargyrum c. cretâ three times a day, and on the third day her mouth became sore, when she immediately recovered her speech. We conceive that here all doubt was removed as to the return of speech in the former instance being the effect of the mercury. In fact, it afforded the most satisfactory confirmation we could have desired as occurring in the same individual. It further confirmed us in the suspicions we have long entertained, that there is often more positive organic lesion lying at the root of those nervous disorders than is generally supposed. It was this suspicion that induced us to resort to the use of mercury in the present instance from experience of its beneficial effects in cerebral affections, marked by such symptoms as caused them to be regarded as purely nervous or hysterical. We believe there is no class of cases in which the physician has more need to be upon his guard, as they come on so insidiously, with headache, but not so severe as to cause much alarm or uneasiness until the stomach becomes affected, when its irritability announces the mischief that has been secretly going on in the head, and when, perhaps, the announcement is too late. It was observed by many physicians who had seen much of cerebro-

spinal arachnitis how often it assumed the features and character of hysteria. We have been led to extend our observations beyond our first intention, which was to do little more than to detail the two remarkable cases of hemorrhage from such unusual situations. The case of Warren, however, seemed to have some title to a place in this category, as having exhibited the hemorrhagic tendency in the profuse hemoptysis and metrorrhagia that occurred with her, in addition to the interest it derived from the rare phenomenon of the loss of speech, and this recurring and disappearing under treatment, which would seem to establish its dependence on substantial organic lesion, whatever its nature might be.

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ART. XVIII.—*On the Physiological Action of Bromide of Potassium.* By J. M. PURSER, A.B., M.B., T.C.D.; Physician to the Whitworth Hospital, Drumcondra; Demonstrator of Anatomy in the Carmichael School of Medicine.

IN the course of last Autumn there came under my notice three papers on the physiological action of bromide of potassium. The great want of uniformity in the conclusions come to by the authors of these, induced me to undertake a series of experiments, the results of which I now bring forward. But before I proceed to detail the results of my own observations, I may give a very brief *resumé* of the conclusions arrived at by the writers of the essays to which I have alluded.

The first paper[a] was published in *Virchow's Archiv.*, by Doctors Eulenburg and Guttmann. They find that bromide of potassium exerts its most marked action on the heart, rapidly paralysing its muscular tissue or ganglia, and bringing it to rest in diastole; that motility and sensibility are much enfeebled, and if the dose of the poison be large, quite destroyed, and this not by an action on the peripheral nerves and muscles, but by an influence exerted on the central nervous system, whereby conduction in the spinal cord is impaired; that at a time when sensation and the power of voluntary motion are extinct, reflex movements are still possible; that later, the peripheral nerves and muscles are paralysed; and that these actions of the salt are due not to the bromine but to the potash.

[a] Ueber die physiologische Wirkung des Bromkalium, von Dr. Albert Eulenburg and Dr. Paul Guttmann. Archiv. for Path. Anat. XLI., 91.

The second paper, by Martin Damourette and Pelvet, was published in the *Bulletin Générale de Therapeutique*. I was unable to obtain the original of this essay; I know it only from a very full abstract given in *Virchow's Year Book*.[b]    These authors experimented partly on frogs—partly on warm-blooded animals. They found that in the former, small doses of bromide of potassium (5–25 Mgm.) caused stupor, slowing of the pulse, and diminished capillary circulation. These effects passed off in from 6 to 24 hours. Medium doses (3–5 Cgm.) caused pain at the point of injection (the drug was always administered by the method of subcutaneous injection), contraction commencing in the muscles near the spot where the poison was applied, and subsequently becoming general; loss of sensation and power of motion occurring first at the place of injection, and afterwards extending to the rest of the body. The power of motion was lost before sensation; and cutaneous sensibility was lost before the irritability of the nerve-trunks. The nerve-trunks lost their excitability before the spinal cord ceased to conduct or to produce reflex movements. Last of all, the muscles were paralysed. Voluntary motion ceased at an early period; many movements which have been supposed voluntary were in reality examples of delayed reflex action. The brain, however, retained its power longer than did the peripheral nerves. Respiration ceased a little later than voluntary motion, and sooner when the injection was made in the back than when in the leg. Diminished capillary circulation, shown by pallor of the web of the foot, and a slow blood-flow, following a temporary hastening, were observed after medium doses. The heart got slow from the first, became feeble when respiration ceased, but continued to beat for many hours after the death of the medulla and other parts. After large doses (8 Cgm.) the action of the heart sometimes ceased before the nerve-trunks lost their excitability, especially when the injection was made in the sternal region, and instead of anemia, congestion, due to vascular paralysis, was observed in the web. The other symptoms occurred as after smaller doses, but more rapidly, and with greater intensity. The authors lay much importance on the point of the body at which the injection is made, as the symptoms at first are always local. In warm-blooded animals, Martin Damourette and Pelvet observed paralysis of motion and

[a] Etude expérimentale sur l'action physiologique du bromure de potassium.    Par Martin Damourette et Pelvet, Bul. Gén. de Therap., LXXIII., 241, 289.

[b] Jahresbericht der gesamm-len Medicine, 1867, Bd. I. S. 421.

sensation beginning in the limb injected; lowering of temperature also at first local; frequent diuresis, sometimes hematuria; finally, stoppage of respiration and death from suffocation before the cessation of the movements of the heart. The direct application of K Br. to the heart or muscles, or nerves, speedily destroyed their excitability. Applied to the cord, it destroyed, first, reflex power, then the power of conducting impressions; to the brain, it caused convulsions, frequently repeated, occurring spontaneously, but increased by irritation, and accompanied by crying out of the animal under experiment; loss of voluntary movement, and cessation of reflex motion first in the head and anterior limbs, and, finally, in the posterior extremities.

The third paper, by Dr. Laborde, was published in Brown-Séquard's *Archives*. The experiments in this case were made entirely on frogs, and the salt was introduced not, as is usual, by subcutaneous injection, but by absorption through the natatory membrane of the foot. The phenomena observed were the following:—Spasmodic movements, sometimes amounting to tetanus, at the commencement of absorption; enfeeblement and loss of reflex movements, due to an action exerted by the poison on the nerve centres (cord); persistence of the power of voluntary motion often for a long period after complete loss of reflex movement; gradual cessation of the respiratory movements of the sides; continuance of the movements of the heart long after the apparent death of the animal.

We thus find, while Eulenburg and Guttmann admit that bromide of potassium has a specific action on the heart, the other experimenters deny this. Martin Damourette and Pelvet state that the action of the poison on the nervous system commences at the periphery, and only slowly extends to the nerve centres, while the others find that the nerves retain their irritability long after the functions of the brain and spinal cord are lost. And, finally, while Eulenburg and Guttmann affirm that reflex excitability persists after the cessation of voluntary motion, Laborde has seen the poisoned animals perform voluntary movements long after all reflex phenomena were at an end.

In coming now to speak of my own observations I shall first state the general conclusions at which I have arrived, and then notice

a Recherches expérimentales sur l'action physiologique et thérapeutique des composés de potassium et du bromure de potassium en particulier. Par M. Laborde. Archives de Physiologie, I., 420.

each of these more or less in detail. I shall, in order to avoid tediousness, not give the complete particulars of each experiment. I would have it understood, however, that my experiments were numerous, and varied so as, as far as possible, to avoid fallacy, and that in every instance careful notes of each experiment were made at the time of its performance. My observations were made exclusively on frogs. The drug was administered in solution in distilled water, and by subcutaneous injection. Some trials of the method of Laborde did not yield satisfactory results. The absorption of the salt by the web was exceedingly slow, evidently gave the animal considerable pain, and the successive phenomena of the poisoning could not be observed with the same convenience as when the method of subcutaneous injection was resorted to.

My conclusions, then, are these:—

After a temporary excitement, betrayed by spasm, and which is sometimes absent, bromide of potassium destroys reflex movement by an action on the grey matter of the brain and cord. Sensation is next destroyed, also by an action on those parts of the nerve centres whose function it is to conduct and receive impressions coming from the periphery. The power of voluntary motion persists, often for a considerable time, and, though much enfeebled, is capable of displaying itself in an intermittent manner with great energy. It is, however, eventually lost, while the nerves and muscles still retain their irritability. The effect of the drug on the heart varies. If the dose be large and injected in the neighbourhood of the thorax, the heart speedily comes to rest in diastole, and this before voluntary or even reflex movement is quite extinct; but if the dose be smaller or injected at a distance from the chest, the heart will continue to beat for hours after movement of every other kind is at an end. The capillary circulation, after a temporary acceleration, becomes slow, and stops altogether before the heart ceases to beat. Respiration is one of the first functions affected, sometimes stopping almost instantaneously on the introduction of the poison. The movements of the hyoid apparatus continue after the motion of the sides has ceased. The nerves cease to convey irritations at a late period, and, last of all, the muscles lose their excitability. The part of the body at which the injection is made influences very much the course of the phenomena, as those muscles and nerves in the neighbourhood of the point of injection are at an early period deprived of irritability.

The spasm observed at first on injection of the poison is a very

inconstant phenomenon. When well marked it is usually limited to the muscles in the vicinity of the point of injection, and, according to my experience, does not extend beyond these, as I have never observed general tetanus. The spasm passes with great rapidity into a paretic or paralytic condition of the muscles affected, and this latter state is sometimes, specially if the dose be large, induced without having been preceded by any contraction. The following experiments will illustrate the phenomena which are generally observed.

A small sickly frog had half a grain of bromide of potassium injected into the leg. Stiffness of the limb and spreading out of the toes followed, which speedily passed into paralysis. Reflex action soon ceased. Voluntary movements continued, but were feeble and difficult to excite. The head was amputated. The section of the cord caused spasmodic movement in every part except the injected leg, which was also the only part of the body of which the muscles and nerves were insensible to galvanic stimulation. A large vigorous frog had two grains of bromide of potassium injected under the skin of the back. Opisthotonos and violent retraction of the arms followed, which soon yielded, the muscles becoming relaxed and flaccid.

This local tetanus is due probably to a direct action of the bromide on the muscles, and is not brought about through nervous irritation, for it was found that a fresh muscle placed in a solution of bromide of potassium immediately fell into tetanus, while a drop of the same solution applied to a nerve did not call forth any contraction in the muscles supplied by it; and the localization of the spasm is sufficient evidence that it is not due to the pain caused by the operation of injection.

We now come to speak of the most important actions of bromide of potassium, namely, those which it exerts on the nerve centres. The first and chief of these is the abolition of reflex movement. On this point my results are identical with those of Laborde, and in opposition to those of Eulenburg and Guttmann. I have taken great pains to satisfy myself on this subject, for to this power of lowering the reflex excitability of the nerve centres is probably due the chief efficacy of bromide of potassium in those diseases for which it is successfully prescribed. The rapidity with which in poisoned animals reflex movements disappear varies with the quantity of the salt used, and with the part of the body at which the injection is made, being greater the larger the dose, and the closer to the brain or spinal cord it is applied.

In some instances when a large quantity was injected close to the brain or medulla oblongata the animal appeared to be almost instantaneously killed, and neither reflex nor voluntary movements were observed, although the muscles and nerves retained their irritability for a considerable time; but in no single case did reflex movements manifest themselves after the cessation of voluntary motion, and often many minutes (or, as in a case observed by Laborde, as much as two hours and three quarters) after apparent death the experimenter is astonished by seeing the frog make a succession of powerful leaps.

In the production of a reflex movement, or one occurring without the intervention of the will, and consequent on an irritation of a centripetal nerve, we have to consider the following stages :— First, the reception of the irritation by the sensitive nerve; second, its propagation to the centre; third, its reflexion or transference to the motor nerve; fourth, its propagation along this to the muscle; fifth, its communication to the muscle; and sixth, the contraction of the muscle. If any one of these stages be not gone through, the circuit is broken, and reflex action is impossible. Now, I may say at once that bromide of potassium breaks the circuit at the third stage, or that of reflexion. That none of the other stages are affected will appear from the following considerations :—

It is a well known physiological fact that reflex movement is much more readily produced when the irritation is applied to the peripheral termination of the sensitive nerve than when the nerve is irritated in its course. This is easily shown by the following experiment. A frog is decapitated, and while reflex action is well marked the skin is stripped from one leg. It is then found that irritants applied to this limb have little or no effect, while those applied to the opposite extremity, which is still clothed by its skin, are as potent as before to produce movement. That in poisoning by bromide of potassium the loss of reflex motion does not depend on cutaneous anesthesia, or any action of the drug on the end organs of the sensitive nerves, is proved by ligaturing the principal artery of a limb before introducing the poison, and so shutting off from its action the termination of the nerves of a large part of the body. In a frog so treated little or no difference is observed in the condition of the two limbs; reflex action is produced no more by the irritation of that protected from the action of the poison than of that whose arteries are pervious, and whose sensitive nerves are fully exposed to the influence of the salt.

Secondly, the sensitive nerves have not lost their power of conducting. The motor nerves certainly have not, for hours after all movement, reflex or voluntary, has ceased, contractions of the muscles can be induced by irritants, whether mechanical, chemical, or electrical, applied to their nerves. Now, we have every reason to believe that the sensitive and motor nerve fibres are identical with one another; the histology, chemistry, and electric phenomena are the same in both, and their different functions are due entirely to their different connexions at centre and periphery; so that if in a mixed nerve trunk the motor fibres are competent to convey impressions, we may safely conclude that the sensitive fibres, exposed as they must be to the same influences, are also capable of conduction. In the long persistence of muscular contraction, when the nerves are irritated after poisoning by bromide of potassium, we find the proof that this salt does not break the circuit of reflex action by acting on the nerve trunks in their course, or, like curara and some other more recently discovered poisons, by paralysing the end organs of the motor fibres, or by so affecting the muscular tissue as to make it incapable of contracting.

We are hence driven back to the point of reflexion in the nerve centre, and led to believe that it is here the circuit is broken. It is impossible to assign the exact mode in which this is effected, for the way in which the transference of an impression from a sensitive to a motor nerve is accomplished is one of the unsolved problems of physiology. Dean[a] has indeed described fibres passing directly from the anterior to the posterior nerve roots, forming a loop in the cord, and unconnected with cells. This mode of connexion is, however, denied by Gerlach,[b] and on physiological grounds it is improbable that the channel through which the reflexion of a centripetal impression is made to a motor nerve is formed by a direct anastomosis of the central ends of the sensitive and motor fibres, for Helmholtz[c] has found that the time occupied in the very act of reflexion is as much as $\frac{1}{10}$th to $\frac{1}{30}$th of a second, which is much longer than would be required if there were a direct communication of nerve fibres in the spinal cord.

Before I go on to describe some of the experiments there is one other physiological point connected with the central interruption of reflexion that deserves notice. A nerve centre has been described

[a] Microscopic Anatomy of the Lumbar Enlargement of the Spinal Cord, p. 10.

[b] Ranke—Grundzüge der Physiologie des Menschen, s. 771.

[c] Eckhard—Experimental physiologie des Nervensystems, s. 268.

by Setschenow seated in the optic thalami and corpora quadrigemina, whose function is to control the reflex phenomena in the cord. He states that the separation of this from the medulla, as in decapitation, produces an increase, while its irritation causes a diminution or loss of spinal reflex excitability. Now, there are grave physiological objections[a] to the theory of Setschenow, which it is not necessary to go into at present, for that the loss of reflex movement observed in my experiments was not due to any increased action of Setschenow's inhibitory centre, but to a depressing action exerted by the poison in the cord itself, is clear from the fact that in almost every instance after determining the absence of reflex movement in the unmutilated animal, the head was cut off, and in no single case did the cord manifest any increase in its reflex excitability on being separated from its supposed inhibitory centre. Since my experiments were completed a paper by Lewizky[b] has come under my notice, in which this point in the physiological action of bromide of potassium is made the subject of special examination, with results which are the same as those at which I had arrived.

When frogs were in their ordinary physiological condition the consequence of an injection of bromide of potassium was, as already stated, an abolition of reflex movement at a time when the power of jumping and of performing other voluntary acts still persisted. It was interesting to examine what the effect of the drug would be on animals, the reflex excitability of whose nerve centres was greater than usual. It is well known that in the Spring the male frog embraces the female for a very lengthened period, and that this embrace is kept up apparently without the exercise of the will, purely by reflex action. That the power even of relaxing his hold is to a great extent lost by the male frog will appear from the experiment I am about to detail. We may hence conclude that the reflex power of the cord, at all events of that part of it from which the brachial nerves arise, is exalted at this period.

A couple were taken in the act of copulation, and one grain of bromide of potassium, dissolved in five minims of water, was injected under the skin of the male in the sacral region. Almost immediately his hold of the female relaxed. Pinching or pricking the toes produced no reaction, but when the legs were extended they

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[a] See Eckhard, l. c., s. 270-272. Vulpian—Leçons, sur la Physiologie du Systeme Nerveux, p. 438-440.

[b] Ueber die Wirkung des Bromkalium auf das Nervensystem. Archiv. für Pathologische Anatomie. Bd. xlv., s. 183.

were drawn up with energy. The respiratory movements ceased from the first. The animal continued to execute powerful leaps, and fifteen minutes after the injection he could still perform powerful voluntary movements. His head was then cut off. As the medulla was cut through violent spasm occurred in the limbs. After decapitation by no means could reflex motion of any kind be produced. An hour later, when the experiment was abandoned, the heart was beating and the nerves and muscles were irritable.

In order to try whether in this instance the pain caused by the injection could have made the male relax his grasp of the female, a second couple were taken, and the leg of the male suddenly amputated about midway between the knee and ankle. Violent struggles were made, and efforts to escape, but the female was held as firmly as before. A grain of bromide of potassium was then injected into the back, and before the syringe was withdrawn the arms of the male had become flaccid, and he rolled off on the table. Voluntary movements were performed after separation from the female, but complete paralysis occurred sooner in this than in the other case, as the injection was made nearer to the head in the second experiment. I next tried the effect of bromide of potassium on frogs whose reflex excitability was artificially increased. For this purpose two frogs, as nearly alike as possible, were poisoned with small doses of strychnia. In about twenty minutes the tetanic symptoms appeared simultaneously in both animals. One had then a grain of bromide of potassium injected under the skin of the sacral region, and the other was kept for comparison. In this latter, which I shall call No. I., the spasms became exceedingly violent, and were called forth by the merest touch or even by slight shaking of the table. The legs were rigidly extended, the body arched forwards, and the arms drawn inwards. In the other frog, which had been submitted to the double poisoning, and which I shall call No. II., the legs were flaccid and not extended, the body was not arched, and, though the arms were drawn inwards, they were not rigid. Touching the feet produced only a slight general twitching, but no tonic spasm. Seventeen minutes after the second injection no reflex movement of any kind could be produced in II. The tetanic symptoms in I., though less violent than before, were still strongly marked. Three minutes later decapitation of both frogs was performed. No reflex movements could be produced in II., while I. moved on the application of the slightest irritant.

I come now to consider the loss of sensation which is induced by

the administration of bromide of potassium. That anesthesia does exist I am led to believe from the fact that while the poisoned animal is quite able to jump and perform other movements, he submits to pinching, pricking, burning, the application of acetic acid, &c., without moving. That this loss of sensation is due to an action of the poison not on the peripheral sensitive organs or on the nerve trunks, will follow from the same arguments as were made use of in considering the cause of the abolition of reflex movements; and it is worthy of notice that the conduction of centripetal impressions and their reflexion, take place in the same part of the spinal cord, namely, the grey matter, so that an action of bromide of potassium on this part of the medulla may I think be fairly assumed.

Experiments on altered sensation performed on animals give always somewhat uncertain results; it is, therefore, of interest to note the effect produced in men by the administration of bromide of potassium in poisonous quantities. Puche, who gave this medicine in enormous doses, upwards of half an ounce (20 grammes) in the day, to syphilitic patients, mentions as symptoms the following:—Headache, hebetude, imperfection of sight and hearing, enfeeblement of memory and intelligence, a feeling of intoxication (d'ivresse), and drowsiness. At the same time the patient staggered in his walk, and could not stand firmly on his legs. When the doses were large and long continued a very curious phenomenon was observed. Sensibility became so blunted that the patient was unconscious of injury when his skin was pinched, pricked, or burned. Touching the cornea also did not cause winking.[a] The insensibility of the mucous membranes, more particularly of those of the mouth and pharynx and of the urethera, has been observed more frequently than cutaneous anesthesia, and has often been taken advantage of in the performance of operations on these parts.

It would appear that the loss of voluntary movement, also observed in the animals experimented upon, was of central origin, and had its cause in a paralysing action, exerted by the bromide, on the centres of volition in the brain, for after all motion was at an end, section of the spinal cord called forth spasms in the limbs; and for hours after death the nerves and muscles retained their irritability, showing that the conducting apparatus was intact. Here, as in the other experiments, the local action of the poison

[a] V. Guibert. Histoire naturelle et médicale des nouveaux médicaments. Deuxième edition, p. 408.

was well marked, for the loss of voluntary motion always occurred sooner the nearer to the head the injection was made.

The action of bromide of potassium on the heart has been the subject of the most discrepant statements. Eulenburg and Guttman affirm that the first and chief action of the drug is to paralyse the heart, and they describe a condition of cardiac dyspnea produced by it in warm-blooded animals. Laborde denies that it exerts any specific action on the heart, as do Martin Damourette and Pelvet; but these latter authors admit that if the dose be large and injected in the neighbourhood of the heart, this organ is brought to rest at a very early stage of the poisoning. Lewizky[a] admits a paralysing action on the heart. Dr. R. Reynolds[b] has not found the bromide to produce any marked weakening of the heart's action. Dr. Clouston[c] found in his patients that with increasing doses of the bromide the pulse·fell gradually till it was about seven beats per minute slower than before the medicine was taken. That when the dose of the bromide reached forty grains three times in the day, the action of the heart was at a minimum, and that with still further increasing doses, the pulse became more rapid, but did not reach the standard it usually had when medicine was not being taken. Dr. Pletzer[d] found that the energy of the heart's impulse diminished, and that the frequency of the beats were lowered, the number of pulsations being generally reduced to 50 per minute, under the influence of bromide of potassium. Guibert[e] looks on the drug as a general sedative to the vascular system.

My own experiments lead me to believe that bromide of potassium exerts a decidedly depressing action on the heart, making its beats slower, feebler, and unrhythmic; that this action is local, exerted on the muscular tissue of the heart itself, and possibly on the intracardiac nervous ganglia; that the action is slower (for the same quantity of the poison) than that exerted on the nervous centres, but much more rapid than that exerted on the voluntary muscles and peripheral nerves.

When large doses, as two grains of the bromide, were injected in the neighbourhood of the heart, this organ was usually found, when

[a] Loc. cit. s. 193.

[b] System of Medicine, II., p. 282.

[c] Experiments to determine the precise effects of bromide of potassium in epilepsy. Journal of Mental Science, Oct. 1868, p. 314, et seq.

[d] On the action and therapeutic uses of bromine and its preparations. Abstract in Brit. and For. Med. Chir. Rev., April, 1869, p. 519.

[e] Loc. cit., p. 409.

exposed a few minutes after the poisoning, at rest, all its chambers widely distended, and its walls insensible to touching or scratching with a needle, and responding only with difficulty, and for a short time, to electric irritation by interrupted currents.   But when the dose of the poison was smaller, or applied at a distance from the heart, the pulsations of the latter were found to continue generally for from $\frac{1}{2}$ to $1\frac{1}{2}$ hours after the death of the nervous centres. Before their complete cessation they usually became unrhythmic, two contractions of the auricles occurring for one of the ventricle. In one case, in which the bromide was introduced very gradually into the system by cutaneous absorption, after the method of Laborde, the heart did not cease to beat for five hours after the commencement of the poisoning, but towards the end its contractions were very feeble, and separated from each other by long intervals of rest.   It was seen when an animal was made motionless with curara, and the heart exposed, that the injection of $\frac{3}{4}$ grain of bromide of potassium, under the skin of the thigh, produced an immediate effect on the mode of contraction of the ventricle, which became short and abrupt, instead of being sustained and slow, as it was before.   The rapidity of pulsation, however, remained about the same, 28 per minute. In a few minutes the rhythm showed the irregularity already described, but became regular again after a short time.   The number of beats per minute continued to vary from 35 to 28, but the contractions of the ventricle became markedly feeble, and nearly three-quarters of an hour before they finally ceased, the blood had become stagnant in the vessels of the web.   A strong solution of bromide of potassium ($25°/_\circ$) dropped on the heart, stopped its movements instantaneously.   The heart excised, and beating rhythmically, 28 per minute, was placed in a solution of one grain of bromide of potassium in a drachm of distilled water or artificial serum.   Its beats became much weaker from the moment of immersion, but not markedly slower; they ceased altogether in $1\frac{1}{2}$ minutes.   The organ was then flaccid, and had quite lost its irritability, whether mechanical or electric stimuli were applied.

My observations on the peripheral circulation, and the condition of the blood vessels in poisoning by bromide of potassium, have not been numerous or decisive enough to warrant my giving any positive opinion on the subject.   The following facts were, however, observed:—The local application of bromide of potassium to the web of the foot produced great vascularity and peeling off of the epidermis.   When the circulation in the web was watched during

the poisoning, after subcutaneous injection, the vessels did not show any alteration in size; the current of blood was for a very short time more rapid than before, but soon became slower, and stopped altogether before the heart ceased to beat. The experiment of Lewizky, by which he attempts to show that bromide of potassium produces contraction of the blood vessels, is, I think, open to objection. It consists in cutting off the toes of a poisoned frog, and of one unpoisoned, and counting the drops of blood which flow from each in a given time. It was found that less flowed from the poisoned animal, and from this Lewizky concludes that in it the blood vessels were contracted. The smaller hemorrhage may, however, be explained by the diminished force of the heart's contractions, and the fact that the blood-flow became more rapid after section of the plexus ischiadicus shows merely that the vessels were paralysed and dilated, consequent on this operation; but does not at all prove that they had been abnormally contracted previously. The division of the nerves does not appear to have been practised on the unpoisoned frog, so we have no means of knowing whether this would have accelerated the blood-flow in it in the same proportion. Lewizky admits that only once, with the microscope, could he detect contraction of the vessels in the web after poisoning with bromide of potassium; but states that he has seen in warm-blooded animals decided narrowing of the retinal vessels follow the exhibition of this salt.

The nerves and voluntary muscles retain their irritability long after the death of every other part. The nerves become unexcitable at a period when electric currents, directly applied, induce powerful contractions in the muscles. In comparative experiments made on poisoned and unpoisoned animals, both decapitated, the irritability of the nerves and muscles was invariably lost much earlier in the former than in the latter. The muscles, immersed in a solution of bromide of potassium, one grain in sixty, were thrown into a condition of tetanus, which soon passed off. Their irritability became gradually feebler, and was lost altogether in from ten to twenty minutes.

When the nerve was immersed in the solution of the bromide it did not give any evidence of irritation, *i.e.*, the muscle supplied by it did not contract. It lost its excitability at an early period, in one case as soon as four minutes after immersion.

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[a] Loc. cit. s. 192.

No alteration in the structure of the muscle, which had lost its irritability by soaking in a solution of bromide of potassium, could be detected by the microscope.

It is worthy of note, that although solutions of bromide of potassium, of from 25 to 1·5 per cent, when applied to the nerves, did not cause any muscular contraction; yet when a few drops of a solution of the salt were injected into the spinal canal of a decapitated frog, violent convulsions of all the limbs and trunk were produced. These lasted only a few seconds, and when they ceased reflex excitability was entirely lost. The conduction of motor impressions was, however, still undestroyed, for irritation of the upper end of the cord with a needle produced spasms in the lower limbs.

I have made a few experiments on the action of three other salts which have been supposed to resemble therapeutically bromide of potassium. These are bromide of sodium, bromide of ammonium, and iodide of potassium.

Bromide of sodium in doses up to five grains caused only temporary feebleness, seldom amounting to absolute paralysis. The secretion from the skin was greatly increased, and complete recovery took place in a few hours.

Bromide of ammonium, on the other hand, is a very poisonous salt. When two grains are injected under the skin of the back the animal is apparently killed instantaneously. It lies motionless for a few minutes, but then begins to crawl or jump. All its movements, reflex and voluntary, are much enfeebled. Reflex action is more easily called forth after decapitation, but the reflex excitability of the cord is certainly not exalted by bromide of ammonium, and although some rigidity of the trunk muscles followed the injection, there was no tonic or clonic convulsion of the limbs, such as has been described by Eulenburg and Guttmann. The heart is very soon brought to rest in diastole. The nerves and muscles also lose their irritability sooner than after poisoning by bromide of potassium, and rigor mortis occurs at a very early period.

Iodide of potassium in doses of 1½ to 3 grains killed frogs with great rapidity. The muscles in the neighbourhood of the point of injection at once became rigid, and this rigidity extended centrifugally to that within five or six minutes after the poisoning, the animal was in the most extreme condition of rigor, which state persisted. Three minutes after injection, before the rigidity had

extended beyond the hip muscles, the movements of the blood in the web had ceased, and the pigment in the cells of the skin was contracted to the centre of each cell. The heart, exposed shortly afterwards when the rigor was complete, was found widely distended and unexcitable. When examined, however, at an earlier period, although at rest, touching with the forceps caused contraction of the ventricle. The rigor appears to be due to a local action of the iodide on the muscular tissue itself. When the femoral artery was tied previous to the injection of the poison, the muscles of the calf in the ligatured limb became stiff less rapidly than those in that whose vessels were pervious, and while a solution of iodide of potassium applied to the nerve caused only slight and transient twitching in the muscle; when this latter was immersed in the same solution it was at once thrown into a condition of the most extreme rigor, which did not again relax.

This account of the action of these three poisons, though very imperfect, is sufficient to show that they differ among each other and from bromide of potassium in several most important particulars.

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ART. XIX.—*Thermometric Observations on Pneumonia.* By THOMAS WRIGLEY GRIMSHAW, A.B., M.D. (Dub.); Licentiate of the King and Queen's College of Physicians; one of the Physicians to Cork-street Fever Hospital; Lecturer on Materia Medica in Steevens' Hospital.[a]

PERHAPS there is no local disease, the febrile symptoms of which so closely resemble those of the specific fevers as pneumonia. Indeed the invasion of this disease resembles so much that of typhus, that it is frequently mistaken for it in its earlier stages, and many cases are sent to fever hospitals as cases of specific fevers. Thus, in the year 1866 the total number of cases admitted into the London Fever Hospital (Liverpool-road) was 3,577; of these 590 were cases which had been sent to the hospital by mistake for specific fever; out of these 120, or about exactly one-fifth, were cases of pneumonia.[b]

[a] This paper was read before the Medical Association of the King and Queen's College of Physicians, on February 15th, 1869, and is now published, with a few notes and a fuller detail of the cases than could be given in a paper read before a society.

[b] Sixty-fifth Report of the London Fever Hospital for the year ending December 31, 1866.

Again, in Glasgow, in the year 1865-66, there were admitted into the City of Glasgow Fever Hospital 1,318 cases, 64 of which were not specific fevers, and of these 64 cases 27 were pneumonia. Out of 547 cases in 1866-67, 37 were not specific fever, and of these 15 were pneumonia. In 1867-68, out of 969 cases admitted 45 were not specific fevers, and of these 15 also were pneumonia.[a]

We thus see that in the two largest cities in the kingdom a large number of pneumonia cases are annually mistaken for fever (usually typhus) and sent into hospital. I have not had time to examine the statistics of the Dublin Fever Hospitals; but of Cork-street I can state that the number of pneumonia cases sent in there in mistake for typhus is considerable. What is the cause of these mistakes, and why is it that a large number of cases of inflammation of the lungs are annually subjected by mistake to the risk of taking fever in our fever hospitals? The answer is simply this:—A medical man accustomed to attend the poor in their own houses, is called to a patient, finds them with quick pulse, high temperature, furred tongue, and all the symptoms of commencing typhus; probably the patient says he has been longer ill than he has, and does not mention anything particular about his chest, and the medical man, consulting the interest of the patient, at once (on seeing such intense febrile symptoms) sends him to a fever hospital in order that no time may be lost in placing such a severe case in the most favourable condition for recovery. The error here is owing to the close resemblance between the febrile symptoms of pneumonia and those of typhus. This close resemblance makes the symptoms of these cases specially worthy of investigation. The chief and essential condition of fever is increased temperature; therefore when inquiring into the course a fever follows, and the variations it passes through, it is really the variation of temperature which most concerns us. The high temperature of the skin in pneumonia patients is a matter of everyday observation, but accurate thermometric observations upon them have not been plentifully recorded. Dr. Addison remarks on this high temperature, and says:—" But of all the symptoms of pneumonia, the most constant and conclusive, in a diagnostic point of view, is a pungent heat of surface; by this symptom alone the first stage of pneumonia may, in most instances, be easily recognized, and by this symptom alone

[a] Reports of the City of Glasgow Fever Hospital for 1865-66, 1866-67, 1867-68. By Dr. James B. Russell.

I have repeatedly pronounced the existence of pneumonia, before asking a single question or making the slightest stethoscopic examination of the chest. The presence of this symptom has scarcely ever yet deceived me in the most complicated forms of inflammation within the chest." Dr. Addison also remarks:— " Notwithstanding its close resemblance to an attack of continued fever—a resemblance so great that even the stethoscopist is thrown off his guard—attentive observations will, in most cases, enable us to recognize the difference." [a]

Dr. Walsh quotes Addison, and also refers to the high temperature in this disease, and states that he has himself observed a temperature of 106°. [b]

Since the clinical use of the thermometer has become more general than it was in the days of Addison, less attention has been paid to the thermometry of pneumonia, than of other acute diseases; nevertheless numerous and very accurate observations have been taken in this disease by the late Dr. Warter and by Dr. Compton. To these and to the observations of others, I now propose to add my own experience, believing that true results can be arrived at only by comparing the aggregate results of numerous observers. [c]

First, let us consider the observations of others; Dr. Warter says:—" The temperatures seem to me to rise to a considerable height at once, for in the only case in which I tried it on the 1st day, the thermometer rose to 102°·8, rising gradually . . . . . seems to attain its greatest elevation on the 4th, 5th, and 6th days . . . the 4th being the most common. On this date, temperatures of 104° and 105° are to be met with and . . . after this the temperature falls pretty rapidly *together with* the pulse . . Should the declining temperature of a case of pneumonia take a fresh rise, some new strip of pleurisy or pneumonia may be stated almost positively to exist. Contrary to what we might expect, double pneumonia does not seem to cause more febrile disturbance, as far as the curve of temperature is concerned,

[a] A collection of the published works of the late Thomas Addison, M.D., &c. By Dr. Wilks and Dr. Daldy. New Sydenham Society. 1868. Pp. 13. Observations on Pneumonia read before the Guy's Physical Society, 1857.

[b] A Practical Treatise on the Diseases of the Lungs, &c. By Walter Hayle Walshe, M.D., &c. Pp. 369. Third edition. 1860.

[c] Professor See, in a paper, the second part of which has been published since this paper was read, notices the close resemblance between the thermometric ranges in this disease and variola :—" Du diagnostic des fievres par la temperature." Par la Professeur See (2e article), Bullitin Général de Therapeutique, March 15th, 1869.

than by inflammation of one lung. The most fatal cases of pneumonia are certainly not those where the temperature ranges highest . . . I have taken normal temperatures where there has been bronchial breathing and mixed crepitation from top to bottom in one lung, and when the other was partially involved. Dr. Warter gives the following :—

| Day. | Temperature. |
|------|--------------|
| 3 | 103°·75 |
| 4 | 104° |
| 5 | 103° |
| 6 | 102°·8 |
| 7 | 100° |
| 8 | 99° |
| 9 | 98° |

Diagram I.

Warter's Range.
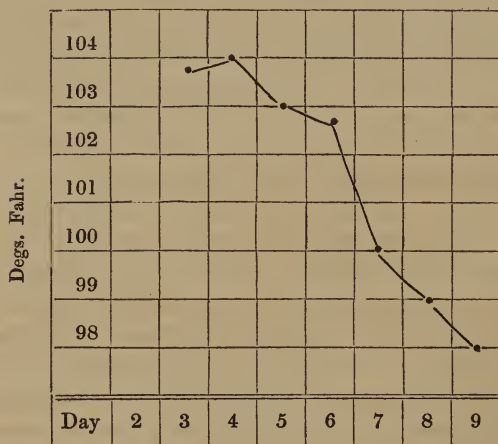


(See diagram, No. 1) as a typical range of temperature in pneumonia.[a]

Dr. Compton does not refer particularly to pneumonia, but gives the following range of temperature for that disease, taken from a female, aged sixteen (See diagram, No. 2):—

[a] Remarks on the Use of the Thermometer in Disease, by J. Southey Warter, St. Bartholomew Hospital Reports, p. 64, Vol. ii., 1866.

| Day. | Temperature. |
|------|--------------|
| 2    | 103°         |
| 3    | 104°·75      |
| 4    | 104°         |
| 5    | 104°·5       |
| 6    | 98°·8        |
| 7    | 98°·5        |
| 8    | 96°          |

Diagram II.

COMPTON'S RANGE.
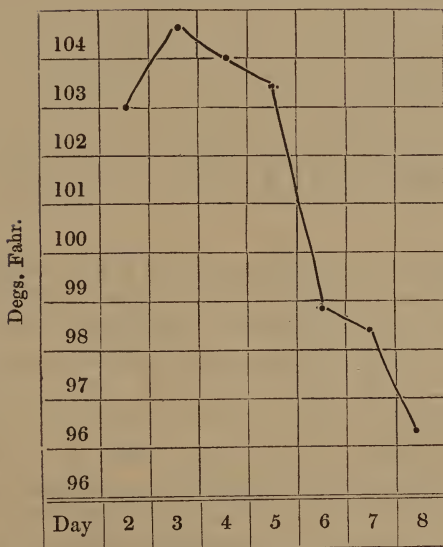


The highest point, it will be observed, is 104°·75.[a]

The following range of temperature is given by Dr. Parkes[b] (See diagram, No. 3):—

| Day. | Respiration. | Pulse. | Temperature. |
|------|--------------|--------|--------------|
| 3    | 36           | 108    | 103°·6       |
| 4    | 36           | 107    | 103°·9       |
| 5    | 43           | 106    | 103°·4       |
| 6    | 38           | 93     | 100°·6       |
| 7    | 30           | 86     | 98°·6        |
| 8    | 31           | 76     | 98°·5        |

[a] Temperature in Acute Disease by T. A. Compton, A.B., M.B., &c., Dublin Quarterly Journal of Medicine, Vol. xlii., p. 60.

[b] Clinical Lectures delivered at University College Hospital. Observations on the Temperature of the Body, and on the Urinary Section, by E. A. Parkes, M.D., &c., Medical Times and Gazette, February 25th, 1860, p. 184.

Diagram III.
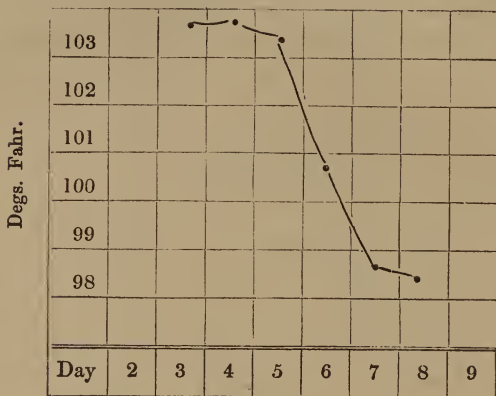
where no treatment was employed but a few leeches.   I only give the mean temperature for each day, from which it will be seen that the highest mean was reached on the fourth day.[a]

I have now to add the experience of another observer, before I detail the results of my own observations.   Since the greater portion of the materials for this paper were arranged and the most of it committed to writing, an important paper by Dr. Maclagan of Dundee, on the thermometric range in pneumonia has been published in the current number (February, 1869) of the *Edinburgh Medical Journal*.   This article escaped my notice until a week ago, and owing to its vague title, " Thermometrical Observations," I did not, when I first noticed it, examine it as carefully as I should have done, if I had known that it referred especially to the disease under consideration.   The conclusions of Dr. Maclagan do not altogether (though pretty closely) accord with those arrived at either by the previously mentioned observers or by myself.   Dr. Maclagan's observations should have an interest which none others have, except the case recorded by Dr. Parkes already noticed,

[a] At the time this paper was read before the Medical Association, the author was under a misapprehension with regard to the range given by Dr. Parkes, which led him into some errors in comparing it with the results of his own observations ; therefore those who heard the paper read and may chance to meet it again in this form, may find some apparent discrepancies between the two statements, which I think it necessary thus to explain.

namely, that there were " sixteen cases of uncomplicated pneumonia
(one or two of which have been detailed in his paper) which it was
believed might safely be left to take their natural course." I am
not sure, however, what Dr. Maclagan considers being left to take
their " natural course" means, as he mentions one case as allowed
to run a natural course without the application of " remedial agents,"
which nevertheless (although a girl of only fourteen years of age),
was allowed 4 ounces of wine daily ! In Dublin, however, we should
consider it an important element of treatment. Dr. Maclagan also
considers light diet (perhaps including *wine*), poultices, and in one
case, blisters over the affected side, *no* treatment ! I cannot agree
with him in this, nor am I of the opinion that we can afford to
stand by, and watch any case of pneumonia taking its natural course,
even for the sake of science, I give a range of temperature taken
by Dr. Maclagan in a case which apparently did not get any wine
but was *only* blistered, as a fair average case of pneumonia. (See
diagram, No. 4.)

| Day. | Respiration. | Pulse. | Temperature. |
|------|--------------|--------|--------------|
| 4 | 56 | 120 | 102°·3 |
| 5 | 56 | 120 | 103° |
| 6 | 38 | 96 | 99°·1 |
| 7 | 32 | 72 | 96°·4 |
| 8 | 32 | 68 | 96°·8 |
| 9 | 28 | 72 | 97°·1 |
| 10 | 36 | 72 | 97°·1 |

Diagram IV.
MACLAGAN'S RANGE.
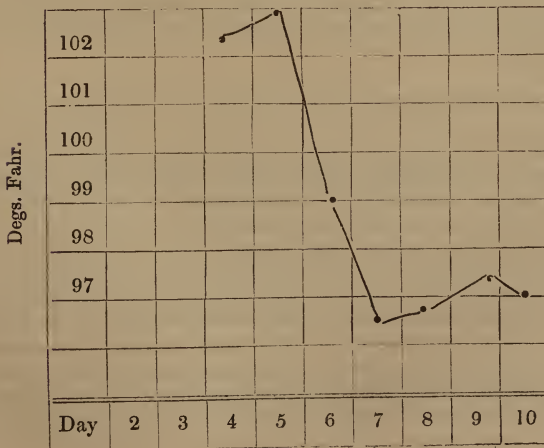
I shall now proceed to detail the results which I have arrived at from my own observations, the majority of which I have taken myself upon patients under my own care and that of my friends and colleagues, Drs. Kennedy, Mason, and Burke; but I am indebted for many to my industrious and zealous pupils, Dr. Skelton and Mr. Clements, of Cork-street Hospital, and to Mr. Rathborne, of Steevens' Hospital, whose observations are equally reliable with my own. In all cases where evening temperatures (which, however, I do not refer to in this paper) have been taken, they have been recorded by my pupils. My observations have extended over about 40 cases, selected during the past three years from those admitted into Cork-street and Steevens' Hospitals. As there are many sources of fallacy in inquiries such as these, I have excluded a considerable number of cases for various reasons, but especially as the exact date of the commencement of illness was doubtful. I find that the length of the illness of pneumonia patients is usually overrated by them, being generally dated from some trivial cold, arising a week, fortnight, or three weeks before the case comes under the care of the physician. I generally find that two or three days usually elapse from the commencement of the acute disease (or, as hospital patients say, from the time they were " real sick ") until they apply for medical advice. My results, which I have obtained by daily observations, have been confirmed from time to time by casual observations on cases, of which I had not the opportunity of making continuous daily records.

In drawing conclusions, I have only taken into consideration *one* observation daily, for reasons I have elsewhere stated,[a] namely, that practically we can usually obtain but one record of temperature each day.[b]

[a] Thermometric Observations in Fever, Medical Press and Circular, pp. 73, 121, 169. Vol. i. 1866.

[b] Wunderlich, in his recent work on the Thermometry of Disease (" Das Verhalten du Eigenewarme in Krankheiten," Leipzig, 1868), rather severely reprimands me for pursuing this course ; nevertheless, I have not altered my opinion that for practical purposes we must rely on one daily observation.

Wunderlich also seems to think that because I have noted many whole degrees, some doubt is thrown on the accuracy of my observations. He seems, however, to have overlooked the fact that a degree of his scale (Centigrade) is about double ($1°·8$) a degree on our scale, and that therefore the chances of noting whole degrees is much greater in my observations than in his. In my observations on typhus which Wunderlich criticises, I noted degrees, halves, and quarters, which would correspond nearly with halves, quarters, and eighths of the Centigrade scale, and are therefore nearly as minute divisions as his own. I am glad, nevertheless, to find that on the whole my observations agree very closely with those of the great German clinical thermometrician.

With a view of obtaining a *mean* range of temperature, I have made a calculation from about 20 cases. (See diagram, No. 5.)

| Day. | Temperature. |
|------|--------------|
| 3    | 102°·75      |
| 4    | 100°·8       |
| 5    | 101°·38      |
| 6    | 100°·34      |
| 7    | 99°·12       |
| 8    | 100°·11      |
| 9    | 100°·32      |
| 10   | 99°·31       |
| 11   | 98°·77       |
| 12   | 98°·42       |

Diagram V.

AVERAGE RANGES CALCULATED FROM 20 CASES.
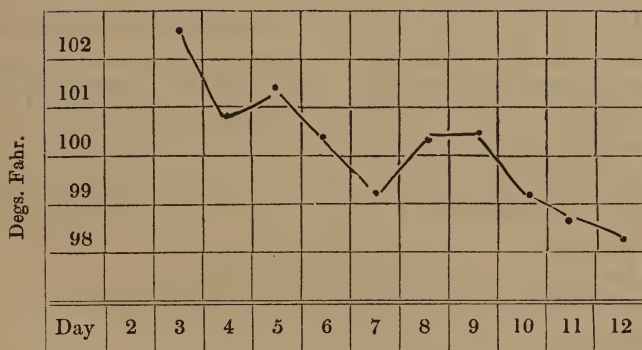


Such a range will, of course, seldom if ever be met with in any *one* case, but it shows what may turn up, generally as to its highest and lowest temperature, and occasionally as to its variations, namely, the highest temperature is usually met with on the 2nd, 3rd, or 4th, to 5th days, and the lowest after the 6th. We also observe irregularities; for instance, a rise on the 5th, and on the 8th and 9th days; I do not attach much importance to such an average for pneumonia, but give it merely as it is usual in other observations of the kind. The following may be considered as an average case, selected from a considerable number (about 40) complicated and uncomplicated :—

CASE I.—*Fair example of average Pneumonia running an ordinary favourable course.* (Under care of Dr. Kennedy.)

Edward F———, aged twenty-one years; three days ill before his admission into Cork-street Hospital, on July 5th, 1867. (4th day). All symptoms of pneumonia, in base of right lung, well marked with considerable bronchitis; respiration, 46; pulse, 100; temperature, 103°·5.

5th day.—Much same state; respiration, 48; pulse, 108; temperature, 102.

6th.—Sharp pain at base of right chest, probably pleuritis; respiration, 40; pulse, 110; temperature, 103.

7th.—Much same state, but pleuritis less; respiration, 48; pulse, 108; temperature, 103°.

8th.—Better in every way; expectoration less and not rusty; respiration, 48; pulse, 84; temperature, 97°.

9th.—Better; respiration, 36; pulse, 84; temperature, 97°·5.

10th.—Light hemoptysis; respiration not noted; pulse, 84; temperature, 98.

11th.—The respiration gradually becoming natural; pulse, 84; respiration, 30; temperature, 98°.

12th.—Improving; respiration, 30; pulse, 84; temperature, 98°.

13th.—Respiration, 26; pulse, 72; temperature, 97°·5.

14th.—Respiration, 20; pulse, 80; temperature, 97°.

15th.—Convalescent; pulse, 90; respiration natural; temperature, 98°. (See diagram, No. 6.)

Diagram VI.
RANGE OF AVERAGE CASE.
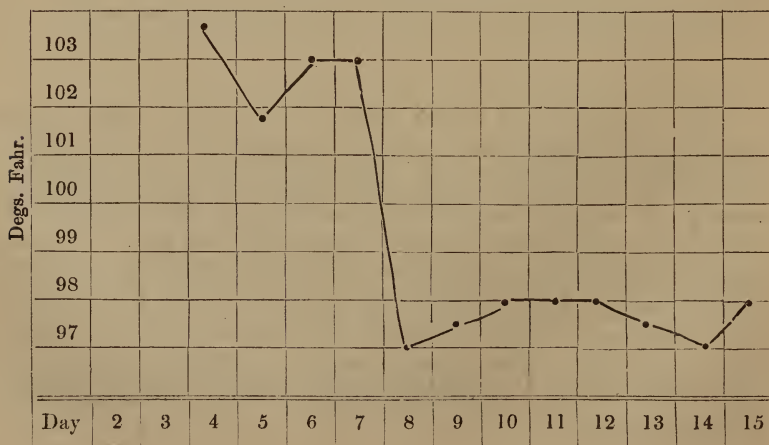
As cases for observation before the 4th day are very few, and in some of these the duration doubtful, I cannot say much about them; but, as far as my experience has gone, I believe the highest temperature is reached on the 3rd or 4th day. In the specimen case which I have here recorded the highest temperature was taken on the 4th day—103°·5; a fall takes place on the 5th, but this was unusual (and in this case I could see no explanation of it), and may not be taken into account. On the 6th it is 103°; on the 7th the same; then falls to 97° (below the average normal temperature), from which time it continues within the limits of health; and this I consider the usual course of the thermometric range. I give another here as an example of a usual case of pneumonia.

Case II.—*Case of ordinary severe Pneumonia following regular course.* (Under care of Dr. Kennedy.)

John F——, aged forty years; admitted into Cork-street Hospital on January 9th, 1866, on the 5th day of his illness. Pneumonia of base of right lung; all symptoms well marked.

In this case the rusty sputum continued until the 8th day. The patient was nearly well on the 14th day, and left the hospital of his own will against advice.

The following is the range of pulse, respiration, and temperature for this case:—

| Day. | Respiration. | Pulse. | Temperature. |
| --- | --- | --- | --- |
| 5 | 42 | 108 | 103°·25 |
| 6 | 36 | 96 | 99°·75 |
| 7 | 28 | 84 | 99° |
| 8 | 24 | 72 | 97°·5 |
| 9 | 24 | 72 | 97° |
| 10 | 18 | 72 | 98° |
| 11 | 24 | 84 | 97° |
| 12 | 20 | 80 | 96°·75 |
| 13 | 20 | 80 | 97°·75 |
| 14 | Discharged. | | |

Comparing this typical case with those of Drs. Warter, Compton, Parkes, and Maclagan:—

COMPARATIVE TABLE OF RANGES OF TEMPERATURE IN PNEUMONIA.[a]

| Day | Grimshaw | Warter | Compton | Parkes | Maclagan |
|-----|----------|--------|---------|--------|----------|
| 2 | — | — | 103 | — | — |
| 3 | — | 103·75 | 104·75 * | 103·6 | — |
| 4 | 103·5 * | 104 * | 104 | 103·9 * | 102·3 |
| 5 | 102 | 103 | 104·5 | 103·4 | 103 * |
| 6 | 103 | 102·8 | 98·8 † | 100·6 | 99·1 |
| 7 | 103 | 100 | 98·5 | 98·6 † | 96·4 † |
| 8 | 97 † | 99 | 96 | 98·5 | 96·8 |
| 9 | 97·5 | 98 † | — | — | 97·1 |
| 10 | 98 | — | — | — | 97 |
| 11 | 98 | — | — | — | — |
| 12 | 98 | — | — | — | — |

Maximum day marked thus *.    Day of decided fall †.

[a] Since the above was written, I have had the opportunity of studying the ranges of temperature given for this disease by Wunderlich and See, in the works already quoted (see notes, p. 337 and 342); from these the following mean daily ranges have been calculated and reduced to Fahrenheit scale.

| Day. | Wunderlich | See |
|------|-----------|-----|
| 2 | 105·9* | 104·3 |
| 3 | 104 | 105·2 |
| 4 | 104·2 | 105·5* |
| 5 | 102·6 | 105·4 |
| 6 | 101·7 | 105·6 |
| 7 | † | 100·3 |
| 8 | | 97·3† |

* Maximum.        † Day of decided fall.

From the above table it is apparent that, according to Wunderlich, in ordinary (for

I find that the maximum is attained on the same day as Dr. Warter's, does not rise so high as his; that the high temperature is continued for about the same time (only a day less), the fall more gradual, and the normal temperature attained about the same time. Comparing with Dr. Compton, I find that the highest temperature in the range of his typical case is reached on the third day, which generally agrees with any observations I have been able to obtain for that day. The high temperature does not continue so long (to the fifth day) in his as in mine, and the normal reached sooner (on the sixth day) than mine. Comparing with Dr. Parkes, I find the highest temperature is reached on the fourth day (same as mine), maintained until the sixth day (a day earlier than mine), when it is 100·6, and the normal attained on the 7th and 8th, a day earlier in mine.

Comparing with Dr. Maclagan's case, selected by myself, the maximum is attained a day later (the 5th), the fall (on the 6th day) is earlier by two days, and the normal is gained on the 9th, a day earlier than mine.

Taking sixteen cases of my own, in which there is scarcely a doubt about the exact date of the commencement of the disease, the highest temperature was reached as follows:—

| | | | | | | |
|---|---|---|---|---|---|---|
| On the 3rd day in | | - | - | 3 | cases. |
| ,, | 4th | ,, | - | - | · 3 | ,, |
| ,, | 5th | ,, | - | - | - 2 | ,, |
| ,, | 6th | ,, | - | - | - 0 | ,, |
| ,, | 7th | ,, | - | - | - 1 | ,, |
| ,, | 8th | ,, | - | - | - 2 | ,, |
| ,, | 9th | ,, | - | - | - 1 | ,, |
| ,, | 10th to 16th | | - | - | 4 | ,, |

Thus in 8 cases, the highest temperature was reached on the 3rd, 4th, and 5th days; in 4 cases, on the 6th, 7th, 8th, and 9th; and in 4, from the 10th to the 16th days; in other words, in half these cases, the maximum was reached on the 3rd, 4th, or 5th days, and

he notices various species which would not be admitted by most British physicians) pneumonia, the maximum is attained on the 2nd day. My observations are too few for that day, either to confirm or deny this statement. He gives a second (if the term is allowable) maximum for the 4th day, which corresponds with my observations ; the normal is reached on the 7th—a day earlier than in mine.

The range given by See differs very much from that of all other observers, maintaining a very high temperature with but slight variations from the 2nd to the 6th day inclusive. The normal is attained on the same day as in mine.

in this I agree with other observers, for Dr. Warter gives the 4th, Dr. Compton the 3rd, and Dr. Maclagan the 5th day, and Dr. Parkes the 4th day.   From similar data I have come to the conclusion that a high temperature is maintained for from 2 to 4 days, the period varying according to the severity of the case and according to the complications that arise.   Although I say a high temperature is maintained, I do not mean that it is constantly at the maximum, but is above 100°, for I believe it usually begins to fall immediately after reaching its maximum, unless some new complication arises, or is about to arise.   Thus in a severe case,[a] uncomplicated, except by an attack of bronchitis after the crisis of the pneumonia had passed, in a female aged eighteen years, under the care of Dr. Kennedy, now convalescent, the temperature obtained on the 4th day was 104°·25 on the affected side, and 103 on the healthy side, which latter may be considered the real temperature of the body.   The high temperature was maintained until the evening of the 5th day, and fell below the normal on the 6th day.   In this case the lowest temperature (95°) which I have noted, occurred.   In another case,[b] a male aged twenty-

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[a] CASE III.—*Case of very severe Pneumonia, with very Extensive and Sudden Fall. Comparison of Temperature on Healthy and Affected Sides.*

Bridget B., servant, eighteen years of age.   Three days ill before admission into Cork-street Hospital, on February 11th, 1869.   All symptoms of pneumonia well marked on right side.   Abundant rusty sputum.

4th Day—Same state.   Respiration 52 ; pulse 132.   Temperature on right (affected side), 104·25 ; left side, 103°.

5th—Worse ; but says she is better.   Respiration 60 ; pulse 100.   Temperature, right side, 102° ; left, 100·5.

6th—Was much worse during night, but now (11 a.m.) much better than at the same time yesterday.   Respiration 32 ; pulse 84.   Temperature, left side, 95°.

7th—Not so well ; was worse yesterday evening ; some bronchitis in left lung. Respiration 36 ; pulse 96°.   Temperature 101·2.

8th—Hemorrhage from nose ; sputum not coloured ; sweating.   Respiration 29 ; pulse 100 ; temperature 98.

11th—Convalescent, but complains of occasional pains in sides.   This case was treated by chlorate of potash, wine, and whiskey, and extensive blisters and poultices on the affected side.

[b] CASE IV.—*Case of Pneumonia complicated with Pleuritis and Scarlatina.*   Under the care of Dr. Burke and the Author, in Dr. Steevens' Hospital.

Henry B——, aged twenty-eight years ; groom ; had a cold a week ago, but dates the present attack from two days before his admission into Steevens' Hospital on January 20th, 1869 ; had two previous attacks of inflammation of the lungs.   On admission all the symptoms of pneumonia well marked, together with some of pleuritis ; inflammation confined to left side of chest.

eight, who came under my care in Steeven's Hospital (when recently acting for my friend Dr. Burke), there was considerable pleuritis with the pneumonia; the patient was also attacked with scarlatina, during the progress of the pneumonia. The temperature on admission to hospital (3rd day) was 103°·5; it fell on the 5th day, but rose again on the 6th to 184°, rather to my astonishment as all the other signs and symptoms had improved. On the 9th day the scarlatina eruptions appeared, so the rise on the 6th day may have been and probably was due to the accession of the scarlatina. The temperature in this case was maintained until the 19th day (when it was still 100°·4); on the 20th day it fell to 98, and a few days afterwards the patient was allowed to get up. In this case the highest temperature I ever recorded in pneumonia (104°·6) was noted, but not during the scarlatina attack. These cases are fair examples of severe cases of pneumonia, one complicated, the others uncomplicated. In three cases I have observed a difference in temperature on the healthy and affected sides; of one of these unfortunately I have no notes, and my observations were not continuous; in another the difference was only 0·75 of a degree; in another of the girl just referred to (see note, case 3), there was on one occasion a difference of 1°·25; in others 1°·5 and 1° difference;

January 21, 3rd day.—Pulse very weak, 120; respiration, 48; temperature, 103° 5.

4th day.—Pulse weaker, 120; respiration difficult, 55; temperature, 102°·8; right lung affected at base.

5th.—Distinct friction sound posteriorly on left side; great dyspnea; countenance anxious; respiration, 48; pulse, 108; temperature, 100. In the evening the patient was much worse, and some pleurite stitches occurred on the left side.

6th.—Better; respiration much easier, 40 per minute; pulse, 125; temperature, 104°; rusty sputum nearly gone.

7th.—Much better; respiration much more healthy; rusty sputum ceased; bronchitic sputum; diarrhea; respiration, 34; pulse, 120; temperature, 103°·2.

8th.—Delirious and restless during night; pain in head; tongue dry and brown; pulse very weak; symptoms typhoid; respiration, 40; pulse, 130; temperature, 103; scarlatina eruption well marked on arms and legs; but slight sore throat.

9th.—Better; eruption fading; crepitus still distinct at back on both sides; respiration, 44; pulse, 104°; temperature, 98°·4.

Several relapses occurred, the temperature rising on four occasions to 104°, and above 104°.

February 7th.—Temperature fell to normal, but pulse still quiet.

On February 10th he was able to sit up. He gradually gained strength, and was discharged from hospital on February 26th, 1869.

The treatment consisted of nitrate of potash and quinine internally; wine in large quantity up to twenty ounces per day. Blisters, poultices, and turpentine stupes were applied externally. On one occasion leeches were applied to the temples to relieve headache.

in all cases where a difference existed, the diseased side had the
highest temperature.[a]

When pneumonia occurs *as* a complication of another disease it
causes a temporary *increase* in the temperature; for instance, there
was a boy affected with typhus,[b] in whom an attack of pneumonia
occurring on the 9th day was preceded by a rise of temperature to
104°·5, it having previously fallen to 103°·  In a case of typhoid,[c]

[a] Since the above was written I have made observations on two more cases in which
I found no difference between the healthy and diseased sides. In those cases where a
higher temperature was observed on the diseased than on the healthy side, a large
part (nearly the whole) of one lung was affected. As the thermometer was placed in
the axilla, it is probable that the high temperature marked by the instrument was
owing to the proximity of a large mass of inflamed tissue. On a future occasion I hope
more closely to examine this question by taking the temperature in the groin or some
other part distant from the local inflammation.

[b] Case V.—*Pneumonia occurring as a complication in Typhus Fever.* Under the care
of the Author in Cork-street Hospital.

Patrick D——, aged fifteen years; one day ill before his admission on September
13th, 1867; father and sister have both had typhus.

2nd day.—September 14; seen first on this day; respiration, 26; pulse, 115; tem-
perature, 103°; bronchitis.

4th.—Worse; respiration, 24; pulse, 108; temperature, 103°·5; bronchitis.

5th.—Mottled; respiration, 30; pulse, 90; temperature, 104°.

6th.—Spots more distinct; respiration, 24; pulse, 100; temperature, 103°.

7th.—Spots darker; respiration, 40; pulse, 120; temperature, 103°·5.

8th.—Worse; respiration, 28; pulse, 120; temperature, 103°·5.

9th.—Worse; respiration, 48; pulse, 125; temperature, 104°·25.

10th.—Spots fading; pneumonia base of right lung; bronchitis still continues; res-
piration, 36; pulse, 120; temperature, 103°·5.

11th.—Pneumonia sputum; worse; respiration, 34; pulse, 120; temperature, 102°.

12th.—Spots nearly gone; expectoration less; respiration, 30; pulse, 90; tem-
perature, 100°.

13th.—Spots gone; chest much better; respiration, 36; pulse, 100; temper-
ature, 102°·2.

14th.—Better in every way; respiration, 36; pulse, 90; temperature, 101°·5.

The patient was convalescent on the 17th day.

This case was treated by tea, some wine was given when the pneumonia appeared,
and blisters were applied on the chest.

[c] Case VI.—*Pneumonia occurring as a Complication of Typhoid.* Under the care of
Dr. Kennedy; observations recorded by Dr. Skelton.

Honor F——, nineteen years of age, attacked by typhoid after recovery from
typhus.

February 23rd, 1868.—Did not seem very unwell, but attention was attracted by the
quick pulse and high temperature. She quickly got worse during the next few days;
respiration, 26; pulse, 110; temperature, 103°·5.

24th.—Tongue with moist, fur in centre; had diarrhea, but bowels now quieter;
respiration, 32; pulse, 100; temperature, 104°; diarrhea, typhoid character; pain on
pressure, and gurgling in right iliac region.

where the temperature had been up to 104°·8, and gradually fallen to 102°, it again rose to 104°·6 on the accession of pneumonia, afterwards falling to 102°, and again rising to 104°·8 on an increase of the pneumonic symptoms. I do not find that in pneumonia of both lungs the temperature is higher than when only *one* lung is attacked, nor does the extent of tissue affected make much difference. As to the relation of temperature to other conditions, I find that the temperature attains its maximum during the period of expectoration of rusty coloured matter, but falls while this still continues; in other words, it attains its maximum and begins to fall during the second stage of the disease. Dr. Maclagan states that the fall does not occur until the third stage

25th.—Tongue bright red, slightly furred, turning brown ; respiration, 48 ; pulse, ; temperature, 103°. All symptoms of typhoid well marked.

26th.—Small dry tongue, bright red at edges and tip ; delirious at night ; subsulties ; respiration, 30 ; pulse, 106 ; temperature, 104°·8.

27th.—Much same state ; respiration, ; pulse not noted ; temperature, 103°.

28th.—Same state ; respiration, 38 ; pulse, 116 ; temperature, 103°·2.

29th.—Diarrhea much worse ; slight bronchitis ; respiration, 44 ; pulse, 136 ; temperature, 102°.

March 1st.—Pneumonia commencing at base of left lung ; respiration, 36 ; pulse, 126 ; temperature, 104°·6.

2nd.—Cough very troublesome ; rusty sputum ; no diarrhea ; face very pale ; pulse 120, very weak ; respiration, 42 ; temperature, 103°.

3rd.—Better night ; diarrhea, bowels moved three times ; respiration, 46; pulse, 122 ; temperature, 102°.

4th. —Not so well ; respiration, 42 ; pulse, 132 ; temperature, 103°·8.

5th.—Much same state ; respiration, 36 ; pulse, 120 ; temperature, 103°.

6th.—Pneumonia worse ; cough very troublesome ; respiration, 42 ; pulse, 138 ; temperature, 104°·8.

7th.—Decidedly better than yesterday ; respiration, 48 ; pulse, 134 ; temperature, 101°·6.

8th.—Improving ; respiration and pulse not noted ; temperature, 102°.

9th.—Better ; no diarrhea ; respiration, 42 ; pulse, 126 ; temperature, 102°·6.

10th.—Respiration, 36 ; pulse, 96 ; temperature, 102°.

11th.—Respiration, 38 ; pulse, 132 ; temperature, 102°.

12th.—Respiration, 36 ; pulse, 132 ; temperature, 100°·2.

13th.—Very weak still ; occasional rusty sputum ; sleeps badly ; cough troublesome ; stethoscopic signs of pneumonia still present.

14th.—Pneumonia less, but still some bronchitis ; respiration, 36 ; pulse, 120 ; temperature, 99°·4.

15th.—Better ; respiration, 30 ; pulse, 90 ; temperature, 101°.

16th.—Respiration, 24 ; pulse, 108 ; temperature, 102°.

17th.—Respiration, 24; pulse, 108 ; temperature, 96°.

18th.—Much better ; respiration, 30 ; pulse, 114 ; temperature, 98°·5.

The patient continued to improve, and was convalescent on March 27th, 1869.

This case was treated by sulphuric acid and opium ; wine in large quantities ; blisters to chest and on right illiac region.

commences. It is well known, however, that *all* the stages of
pneumonia are usually present during a considerable portion of the
duration of each case. I therefore prefer to speak of the duration of
the rusty sputum to speaking of any special stage as all stages may
co-exist.

*This* observation has some relation to the question whether
pneumonia is essentially a local disease or local manifestation of a
specific fever. Certainly, the fall of the temperature before the lung
mischief is on the decline—indeed we may say before it is complete—
rather points to the disease being of the character of a specific fever.
I am rather inclined to this opinion myself, but do not propose
to pursue this question farther at present (interesting though it be).
With reference to the relation of temperature to other symptoms—
pulse and respiration particularly, I find that the pulse and
temperature usually fall together, or the latter shortly before the
former; thus, in 12 cases where the relation between the pulse
symptoms is specially and exactly noted, in 6 the temperature and
pulse fell together, in 5 the temperature fell shortly before the
pulse, and in one only the pulse fell before the temperature. The
fall in temperature does not generally, as in other diseases, precede
the fall in the rate of the pulse. The high temperature
corresponds also in most cases with a typhus pulse—*i.e.*, a pulse
of very low tension, easily influenced by pressure. (See sphygmo-
grams, Figs, 1 and 2.)

Fig. 1.
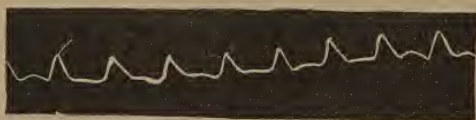


Male, aged 20 years; 6th day; temperature, 103°.

Fig. 2.
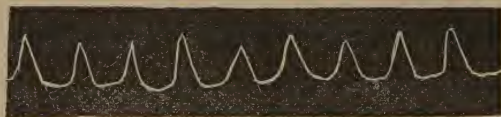


Male, aged 22 years; 6th day; temperature, 103°·6.

The relation between the temperature and respiration is more

remarkable than its relation to the pulse. We usually find that the temperature diminishes before the respiration decreases in rapidity; thus, in the case already cited as having a typical range, the respiration continued above 36 per minute until the 9th day, although the temperature fell on the 8th day, and I could quote several such examples.[a]

As a means of diagnosis the temperature may be useful in distinguishing this disease from typhus, for the maximum in this disease is always attained before the 6th day, usually on the 3rd or 4th; whereas in typhus the maximum is not usually attained until the 7th day or later; thus, if one finds a patient with febrile symptoms and a very high temperature (103° or more) on the 3rd or 4th day, we may suspect pneumonia, and almost certainly exclude typhus, which is the disease most liable to be confounded with it.[b] The following conclusions are, I think, justified by the foregoing observations:—

1st.—Pneumonia has (when uncomplicated) a tolerably definite range of temperature.

2nd.—The highest temperature attained is usually between 103° and 104° Fahr.

3rd.—The maximum temperature is usually attained on the 3rd, 4th, or 5th day, after which the temperature falls and reaches the normal on the 6th or 7th day.

[a] Mary C——, aged fifteen years.
    On the 2nd day the temperature was 104°·5; respiration, 24.
       ,,    4th           ,,            102°·5;    ,,      34.
Edward F——, aged twenty-one years (already reported as typical case.)
    On the 4th day, temperature, 103·5; respiration, 46.
       ,,   5th      ,,       102      ,,      48.
       ,,   6th      ,,       103      ,,      40.
       ,,   7th      ,,       103      ,,      48.
       ,,   8th      ,,        97      ,,      48.
John T——, aged forty years, also previously quoted.
    On the 5th day, temperature, 103·25; respiration, 42.
       ,,   6th      ,,       99·75     ,,      36.
       ,,   7th      ,,       99        ,,      28.
       ,,   8th      ,,       97·5      ,,      24.
Margaret K——, aged fourteen years.
    On the 10th day, temperature, 101·5; respiration, 48.
       ,,   11th     ,,       99        ,,      36.
       ,,   14th     ,,       98        ,,      24.
Michael D——, aged fifty, very slight, circum—— pneumonia.
    On the 8th day, temperature, 102; respiration, 36.

[b] All the temperatures upon which the foregoing remarks are founded are taken in the axilla with thermometers provided for me by Mr. Yeates, of Grafton-street.

4th.—The height of the thermometer does not necessarily indicate the intensity of the disease.

5th.—The fall of temperature does not indicate the cessation of mischief, but only that the disease is about to enter on the 3rd stage.

6th.—If a high temperature is maintained for a long time (more than 3 or 4 days) or a fresh rise takes place, it indicates a fresh attack in a previously healthy part, or the advent of a complication.

7th.—The temperature and pulse usually, though not always, rise and fall together.

8th.—The temperature usually decreases before the frequency of the respirations diminish.

9th.—A high temperature before the 6th day in a doubtful case generally indicates it to be one of pneumonia and *not* of typhus.

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Art. XX.—*On the Therapeutic Properties of Ferric Iodate.* By Charles A. Cameron, Ph.D., M.D., L.K. & Q.C.P.I.; Professor of Hygiene in the Royal College of Surgeons; Lecturer on Chemistry in the Medical Schools of Steevens' Hospital and Peter-street; Analyst to the City of Dublin, &c., &c.

Although it has been proposed to employ the iodates as therapeutic agents, these compounds do not appear to have found any favour with the practitioners of medicine. It has been urged as an objection to their use that they part with their oxygen too readily. Unless it can be shown that in parting with their oxygen free iodine or hydriodic acid is simultaneously evolved, I cannot see the force of such an objection. It appears to me that amongst the numerous compounds of iodic acid there are to be found valuable remedial agents, and I venture to suggest the employment of one of them—namely, ferric iodate (iodate of the sesquioxide of iron)—as a substitute for iodide of iron.

Before explaining the reasons which have led me to suggest the therapeutic use of ferric iodate, I propose, for the benefit of those whose chemical knowledge may be somewhat rusty, to briefly describe the preparation, composition, and physical properties of this body.

There are two iodates of iron—ferrous (iodate of protoxide of iron), and ferric (iodate of per or sesquioxide of iron). The

ferrous iodate is an unstable compound, but the ferric iodate does not readily undergo decomposition. On mixing iodate of sodium ($NaIO_3$ or $NaO,IO_5$, old notation) with an ammoniacal solution of ferric sulphate (sulphate of the peroxide of iron) a yellowish precipitate of ferric iodate takes place. The formula of this precipitate appears to be as follows:—$Fe_2O_3.2I_2O_5.8H_2O$. It is, therefore, a basic salt, containing 51 per cent. of iodine and 11 per cent. of iron.

Ferric iodate is a fine yellowish red powder, closely resembling Turkey rhubarb in appearance. It is nearly insoluble in water, and is decomposed by hydrochloric acid, with the evolution of chlorine. It dissolves in nitric acid and sulphuric acid without evolving any odour, and forms with those fluids a colourless solution. If carefully prepared it is inodorous, but it is likely to possess a very faint odour of iodine. It is very nearly tasteless. At the temperature of boiling water it remains long unchanged; nor has the atmosphere any effect upon it.

The crystallized protiodide of the Pharmacopœia contains $63\frac{1}{2}$ per cent. of iodine and $13\frac{1}{2}$ per cent. of iron; its formula being $FeI_2 5H_2O$. It is therefore richer in iron and iodine than the ferric iodate, but in the two salts the same relative proportions of iron and iodine exist.

The therapeutic value of the iodide of iron is undoubtedly very great, and few medicines are at the present time more generally or largely prescribed; but the instability and intensely disagreeable flavour of this substance are great drawbacks to its employment. Syrup of iodide of iron and *Blancard's pills* are devices not always successful to prevent the disruption of the particles of the iodide of iron. The ordinary pills of the iodide of iron are a most uncertain preparation; and Dr. Rawdon Macnamara remarks in his *Materia Medica*, "that when kept for some time they become very soft and lose all trace of iodine."

Iodate of iron is sparingly soluble; but in the case of so powerful a medicine great solubility is perhaps not a desirable attribute. Calomel is insoluble, but is it the less valuable because it is so? Antimonial powder and many other of our most valuable remedial agents do not dissolve in water.

As a substitute for iodide of iron, the iodate of iron possesses great advantages, some of which I shall enumerate. In the first place, it possesses a stability of composition, the want of which is so serious a disadvantage in the case of iodide of iron. Secondly, it is

a preparation capable of easy administration, being nearly tasteless, and producing no discolouration of the teeth. I have known many cases wheıe patients exhibited so great a distaste to the acrid iodide of iron that they could not take it in any form. It is probable that *iodism* is produced more frequently by the use of the ferrous iodide than by the alkaline iodides. Thirdly, whatever medicinal virtues are possessed by the chlorates, so far as their oxygen is concerned, are in all probability also to be found in the iodates, which they so closely resemble. The only difference between common culinary salt and chlorate of sodium (chlorate of soda) is the existence of a large quantity of oxygen in the latter. There is the same difference between the chloride of potassium and the chlorate of that metal. In addition to the powerful properties which it derives from its iron and iodine, ferric iodate also possesses the advantage of having a large percentage of " condensed " oxygen. If, as Dr. O'Dwyer states to be the case, chlorate of potassium modifies the action of mercury upon the system, and prevents it from running riot, iodate of iron might have the same effect. In syphilitic affections it would be worth trying whether the iodate of iron might not with advantage be alternated with the mercurial preparations when it is found necessary to employ the latter.

I have not the opportunity of determining the relative merits of the sesqui-iodate of iron *versus* iodide of iron or the iodide of potassium in actual practice; some of my medical friends have, however, undertaken the experiment, and so far, they report favourably of the iodate. A member of my own family, who could never tolerate in any form the iodide of iron, is now taking pills composed of three grains of iodate of iron and two grains of extract of hyosciamus.

The ferric iodate has been introduced into several of the Dublin Hospitals, and, amongst the physicians who are employing it, I may mention Sir Dominic Corrigan, Bart., Drs. Hudson, Little, Jennings, Forrest, Ringland, Roe, D. Hewitt, Quinlan, and Macnamara.

Dr. William Moore, Professor of the Practice of Medicine in the University Medical School, informs me that he has prescribed the iodate of iron about twenty-five times during the last fortnight, and with great success. In no case was *iodism* produced, and no complaint was made relative to the flavour of the medicine. Dr. Moore used it chiefly in the case of atonic females, especially where there was reason to suspect a strumous taint.

Dr. B. F. M'Dowell, Surgeon to Mercer's Hospital, and Lecturer

on Materia Medica in the Ledwich School of Medicine, has favoured me with the following communication:—

" Since you suggested to me the use of the sesqui-iodate of iron as a therapeutic agent, I have employed it frequently, and in some cases I found it almost invaluable.

" I believe it to be best suited where free iodine, in any form, or its unstable compounds, such as those of iron, are likely to disagree with the patient, or where a permanent combination of iodine with iron is indicated.

" In two cases in which I employed it the iodides of iron and potassium had been each tried, and had been followed by the peculiar train of symptoms which are developed by those remedies in certain idiosyncracies—such for example as frontal headache, coryza, &c.—and in these cases the ferric iodate was taken regularly with great benefit, and was not followed by any unpleasant symptom.

" My experience so far is necessarily limited, and I cannot therefore lay down any exact guide for the cases in which it will be found most useful; but I shall quote one case from my note book in which its employment was followed by signal benefit to the patient.

" Mr. ———— consulted me in the latter end of February for chronic induration of all the glands in the left groin. He had had a mild roseolar eruption and erythema of the fauces about three months previously, for which he took a mild mercurial course, under the influence of which and of an antiseptic gargle the eruption disappeared, and the throat got well. But he also had gonorrhea at the same time, which also disappeared under appropriate treatment. About six weeks ago a few of the glands of the groin became indurated to a slight degree, and this continued to increase until all the glands became engaged, and the groin was in a solid flag-like state of chronic inflammation, with no tendency to suppuration. He was anemic, his stomach was irritable, and he was unable to take exercise. Several remedies had been employed but without benefit, and the iodide of potassium did not agree with him, and its use was discontinued. He was ordered three grains of the sesqui-iodate of iron three times a-day, and a pint of porter, with fresh meat, every day, and an occasional purge. In a fortnight the induration had entirely disappeared, and he has not since suffered from it.

" I will gladly give you the particulars of other cases after a little time."

The iodate of iron may be given in the form of bolus, electuary, powder, lozenge, or pill—the last form is probably the best, except, of course, in the case of children. The dose is from two to five grains. It may be used wherever iodide of iron is indicated, but it partakes somewhat more of the character of a ferruginous preparation than the iodide—a feature which may in many cases prove desirable rather than the reverse. A two-grain dose of ferric iodate may be given in a three grain pill. I have some pills each composed of two grains of the iodate and one of extract of gentian, which were prepared a month ago. They have undergone no change since their preparation.

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ART. XXI.—*The Treatment of Gonorrhea by an Improved Continuous Injector.* By Mr. MORGAN, F.R.C.S.I.; Surgeon to Mercer's Hospital and to the Westmoreland Lock Hospital; Professor of Surgical and Descriptive Anatomy R.C.S.I.

THE practical difficulty of thoroughly applying a medicated solution to the male urethra has been frequently recognized by practitioners, and has led to many differences of opinion as to the absolute value of injections as ordinarily applied—some believing that they attain much more fully the deeper parts, and others, again, that it is sufficient to reach the first two inches, or the " specific region " of the canal.

The superior efficiency, however, of injections that fill the urethra and reach to the deeper parts, is generally admitted, and the experience of continental and other surgeons confirm this view.

The few instances of *post mortem* examinations that have occurred prove the inflammation to have extended deeply down the canal; thus Rokitansky gives as the pathological change, " that not only the fossa navicularis but every point as far as the prostatic portion, and specially the vicinity of the bulb, is liable to become diseased." Sir H. Thompson, from *post mortem* observations, found " unusual vascularity at the bulb and fossa navicularis."

The result of deep urethral injections have, in the hands of Bonnet, Diday, Bumstead, &c., proved the most successful, the chief method of applying them being by means of catheter-pipes attached to the syringe, Tiemann's " universal syringe " being that generally used and most applicable. In the using of this syringe, however, or, indeed, of any other, I have found inconveniences; and I think it will be admitted that, with timid and nervous
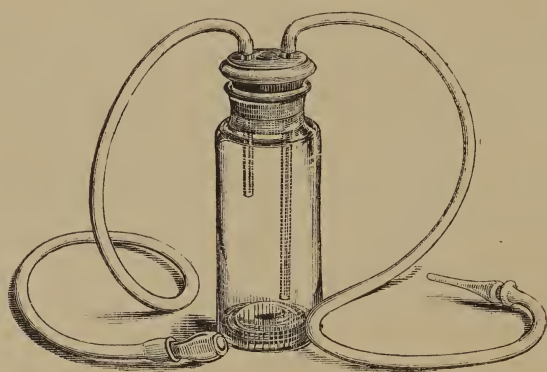
patients particularly, there is great difficulty, and that many who have just been the subjects of gonorrhea will not allow or bear the introduction of an instrument of any length into the passage when in a state of irritation.

I believe that the failure and uncertainty of most injections arises not so much from their composition as from their insufficient application and non-diffusion over the surface; and also that the frequent and large use of a diluted and weak injection is better than the more limited application of a stronger one. To carry out the latter object I have put together an arrangement for applying a diluted application to the deep parts of the urethra, using the principle of the chemical " wash-bottle " as the injecting force.

The injection-point is made rather abruptly tapered so as to plug the orifice with tolerable ease. The patient's hands are both left free, the one to hold and support the penis, the other to introduce and keep steady the injection-point. The mouth-piece leading to the bottle is to be held between the teeth, and by blowing more or less energetically, a continuous injection can be attained. The more fully the injection-point is introduced, so as to fill the orifice, the more deeply will the application penetrate by the filling of the urethra. The bottle holds about two ounces, which I find the most convenient and useful quantity for use. In the acuter stages, great relief can be given by the use of this application in introducing sedative solutions, such as ʒss. vel. ʒi. tinct. opii ad. ʒi. aquæ, or the ext. opii aquosi, gr. i. ad. ʒi. aquæ, which answers even better; the solution should be previously warmed by letting the bottle stand in hot water, and this may be used three or four times a day.

After the first few days I have found the bisulphite of lime solution (prepared by Medlock and Bailey) as the most useful medicament, added, according to the sensations of the patient, ʒi. vel. ʒii. ad ʒi. aquæ; it seems to influence specially the virulence and quantity of the discharge.

If any of the ordinary ingredients in use be preferred, such as sulphate of zinc, tannin, &c., they should be applied in very dilute form, chiefly to be regulated by the sensibility of the urethra and the feelings of the patient, as a large surface is brought under the influence of the application by the full and gentle distension of the urethra by this means.

In spermatorrhea, also, I have found the application of a sedative solution of tinct. opii ʒss. ad. ʒi. aquæ, used night and morning as

most efficacious in allaying hypersensibility, unless in such rare and severe cases as require the application of strong local applications by the porte caustique, or sponge.

Notwithstanding the frequency of the affection in the male, the following *Abstract of Cases under Treatment in the Westmoreland Lock Hospital for the Half-year ending December* 31, 1868, will show how seldom women are compelled to seek admission to hospital for uncomplicated gonorrhea.

One hundred and ninety-six venereal patients have been under my observation and treatment during the past half-year; 104 of these were suffering from sores on the genitals, with or without bubo or constitutional signs.

|  |  |  |  |  |
|---|---|---|---|---|
| 26 | were admitted who never were before diseased. |
| 21 | ,, | | who were once diseased previously. |
| 16 | ,, | ,, | twice | ,, |
| 6 | ,, | ,, | three times | ,, |
| 8 | ,, | ,, | four times diseased previously. |
| 6 | ,, | ,, | five times | ,, |

—
83

Five were uncertain, and had suffered mostly from gonorrhea.

Notwithstanding the difficulty of securing reliable data as to the occurrence of primary disease, I have, after not a little trouble, obtained the following tolerably accurate information as to the length of time during which several, the subjects of genital sores in a *virulent* form, have *admitted* they led an irregular life while suffering from the disease, even up to a period of three months previous to entering hospital.

|  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| 13 | cases existed before admission | . | | . | 1 | week |
| 14 | ,, | ,, | . | . | 2 | ,, |
| 5 | ,, | ,, | . | . | 3 | ,, |
| 9 | ,, | ,, | . | . | 4 | ,, |
| 2 | ,, | ,, | . | . | 5 | ,, |
| 2 | ,, | ,, | . | . | 6 | ,, |
| 4 | ,, | ,, | . | . | 8 | ,, |
| 3 | ,, | ,, | . | . | 12 | ,, |

—
52, total.

The cases where the genital sores have existed for *over three months*, while leading an unvirtuous life, have not been infrequent.

| | | | | |
|---|---|---|---|---|
| In 3 cases the sore had existed | . | . | 4 | months |
| ,, 3 ,, | ,, | . | . 5 | ,, |
| ,, 1 ,, | ,, | . | . 10 | ,, |
| ,, 1 ,, | ,, | . | . 11 | ,, |
| ,, 1 ,, | ,, | . | . 13 | ,, |
| ,, 1 ,, | ,, | .· | . 14 | ,, |
| ,, 1 ,, | ,, | . | . 16 | ,, |
| ,, 1 ,, | ,, | . | . 17 | ,, |
| ,, 2 ,, | ,, | . | . 18 | ,, |
| ,, 1 ,, | ,, | . | . 20 | ,, |
| ,, 1 ,, | ,, | . | . 36 | ,, |

16, total.

These had assumed more or less the character of chronicity; they were not auto-inoculable, but of great extent and slow in their progress; there may be some question as to their special power of contagion; if they are contagious the mischief done is incalculable, and shows how disease may pervade the community at large.

The following table represents the periods during which the patients admitted they had been leading an irregular life, previous to their admission to the hospital as diseased.

| For 1 month | . | . 3 cases | For 7 years | . | . 7 cases |
|---|---|---|---|---|---|
| ,, 2 ,, | . | . 1 ,, | ,, 8 ,, | . | . 5 ,, |
| ,, 3 ,, | . | . 5 ,, | ,, 9 ,, | . | . 2 ,, |
| ,, 4 ,, | . | . 2 ,, | ,, 10 ,, | . | . 6 ,, |
| ,, 5 ,, | . | . 1 ,, | ,, 12 ,, | . | . 1 ,, |
| ,, 6 ,, | . | . 6 ,, | ,, 13 ,, | . | . 1 ,, |
| ,, 9 ,, | . | . 5 ,, | ,, 14 ., | . | . 1 ,, |
| ,, 12 ,, | . | . 8 ,, | ,, 15 ,, | . | . 1 ,, |
| ,, 18 ,, | . | . 12 ,, | ,, 16 ,, | . | . 1 ,, |
| ,, 2 years | . | . 4 ,, | ,, 17 ,, | . | . 2 ,, |
| ,, 3 ,, | . | . 8 ,, | ,, 20 ,, | . | . 1 ,, |
| ,, 4 ,, | . | . 7 ,, | ,, 25 ,, | . | . 1 ,, |
| ,, 5 ,, | . | . 9 ,, | | | |
| ,, 6 ,, | . | . 4 ,, | 104 | | |

Of these several had been diseased on previous occasions.

The cases admitted suffering from genital ulcers for the *first* time were 26 in number—mostly young girls, robust and otherwise healthy, aged from 15 to 23 years—the sores were, as a rule, non-indurated; the glands in the groin did not often suppurate, but were frequently swollen and painful on one side only:—

5 cases were followed by mucous patches only
1    ,,    ,,      ,,      and laryngeal ulcer
3    ,,    ,,    papular and patches
3    ,,    ,,    mucous patch
1    ,,    ,,    bubo and patch
2    ,,    ,,    papular eruption only
2    ,,    ,,    secondary ulcers
1    ,,    ,,    pains and ulcers of fauces
1 followed by papular and severe pains
1    ,,    ,,    and patch of fauces
1    ,,    ,,    and erythema of throat
1    ,,    ,,    bubo and inoculated sore
2    ,,    ,,    iritis and pains
1    ,,   roseolar only
—
25

There is but one case which has not as yet shown constitutional symptoms.

*General Tabulation of Cases under Treatment, not including Primary Sores :—*

| | |
|---|---|
| Papular eruptions, | 10 cases |
| Papular and roseolar, mixed, | 4 ,, |
| Ecthyma, | 4 ,, |
| "Patches" of anus and genitals, | 14 ,, |
| Syphilitic maculæ, | 1 ,, |
| Tubercular eruption, | 2 ,, |
| Iritis of one eye, | 3 ,, |
| Do. of both eyes, | 1 ,, |
| Pemphigus, | 2 ,, |
| Anal fissures (severe), | 1 ,, |
| Rupia, | 2 ,, |
| Secondary ulcers, | 4 ,, |
| Myringitis, | 2 ,, |
| Ulcers of the mouth, | 2 ,, |
| Ulcers (deep) of the tongue, | 4 ,, |
| Extensive sloughing ulcer of pharynx, | 2 ,, |

| | | | | |
|---|---|---|---|---|
| Ulcerations of the larynx, | . | . | . | 7 cases. |
| Extensive ulceration of the rectum, | . | . | 2 | ,, |
| Severe syphilitic pains, | . | . | . | 5 ,, |
| Large gummata, | . | . | . | 3 ,, |
| Gummata on the heart, | . | . | . | 1 ,, |
| Incidental abscesses, . | . | . | . | 5 ,, |
| Prolapsus uteri and vagina, | . | . | . | 3 ,, |
| Urethra destroyed by ulceration, | . | . | 3 | ,, |
| Nodes and Exfoliations, | . | . | . | 5 ,, |

The comparative frequency of these manifestations where the subjects of them have been affected several times by genital sore, in contrast with the preceding table, where they have been but once the recipients, is interesting. The formation of patches and the development of the papular eruption being the earlier and more frequent evidences of constitutional infection. Several of these cases were the subjects also of gonorrhea, complicated with ovarian irritation, with abscess of the labium, or suppurating bubo.

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Art. XXII.—*Disease of the Knee-Joint—Amputation—Recovery.* By R. Tuthill Massy, M.D., L.R.C.S.I.

A GENTLEMAN aged twenty-three, when about five years old complained of pain in the knee-joint, which increased on motion, and gave evidence of what is usually called white swelling. He was treated for some time at a hydropathic establishment at Great Malvern without any benefit. Afterwards he had the usual starch bandage and iodine treatment at home. Lastly, he was placed under the care of a female rubber at Southport, in Lancashire, who took the case and promised, as all such persons do, "a cure" from her treatment by friction, &c., &c.

Much was not permanently expected, for by the father's side there is some delicacy in the family. One of his aunts has disease of the bones in her fingers quite incurable, except by removal, which she would not submit to. His eldest brother died of acute diabetes at about the age of twelve.

After five or six years of ineffectual treatment in the case before us, amputation was decided on, but the surgeon at the last moment declined the operation, thinking there was some lung disease, although I had previously pronounced the lungs healthy, but has since said he feared the diseased bone was extending

upwards. At this time there were but a few openings, and it was a case in which the joint might have been safely removed had the operation been much in vogue.

I have always regretted this surgical indecision, and have continued to repeat my unchanged opinion until the patient began to think with me; and finally, he had Sir Wm. Fergusson to examine the limb on the 9th of October, 1867. Sir Wm. writes:— "My opinion is that so much disease still remains that there can be little hope entertained that the discharge now going on will ever cease. It is possible that all might go well after excision, but the circumstances are not peculiarly favourable for that operation. Taking all into consideration, I believe that amputation in the thigh would be the best course. The risk of that operation would certainly not be greater than usual—rather, I think, less— and should it be performed, I do not think it necessary to make the incisions high up in the limb, for I imagine that the really incurable part of the disease is at the end closely above the knee itself."

On Wednesday, the 16th, everything was prepared for the operation. Dr. Charles Kidd gave chloroform, and with the assistance of Mr. Pope I removed the limb by a long lower and a short upper flap. The knife entered about the upper third of the thigh bone, about half an inch above where the roughness on the bone had ceased, and the knife passed out above and below immediately opposite the old fistulous openings, but clearing them so as to form an excellent stump. Six ligatures were required for the enlarged arteries and two sutures to keep the flaps in apposition. The parts were bathed with tincture of calendula in water; the patient had a good night. I may here mention that a carriage drive was prescribed up and down the Brighton promenade on the morning of the operation, and a breakfast cup of beef-tea an hour before inhaling the chloroform, which was considered very judicious.

The diseased leg had a rather sad appearance both before and after removal. The right knee and foot were twisted outwards; limb shortened; calf wasted; knee bent, anchylosed, swollen; skin of a deep red, perforated with about twenty oval openings, from which exuded a dark stinking pus; this covering when cut through was dense, and where the holes traversed the integuments to the joint they had a hard cartilaginous lining. The sciatic nerve was imbedded in a dense structure, and two sinuses led by it from the popliteal space into the joint.
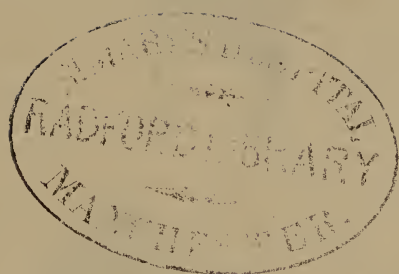
Our illustrations give two (half-size) views of the dislocated and diseased bones, one—the external and anterior—exhibiting the patella adhering by a bony union to the outer condyle of the femur, while two bony pillars connect the heads of the joint together; between them an oval opening is visible, which communicates with the spongy heads of both bones, and from this a brown fetid matter issued into the open joint. The interarticular and cartilaginous coverings were quite gone, completely absorbed. A sharp horny point of bone and some other irregularities are thrown out from the upper point of the patella, which were often the hidden cause of pain and irritation.

The second illustration gives the section from above downwards and inwards through the spongy heads, which were large and expanded with cells containing a dirty coloured matter. The head of the fibula is also diseased and quite rotten under the saw; cartilage and ligaments gone; bone smaller, and appeared to have ceased to grow since it lost its joint. The femur had rough folds of bone thrown out along the outer side extending up to about an inch of the upper third, where the amputation was performed. Notwithstanding this I believe the knee-joint might have been successfully excised ten years ago, when first amputation was proposed, and those years of suffering prevented.

On opening the ankle-joint I observed a small hole about the size of a split pea in the neck of the astragalus, having a pearly colour when cut through with the scalpel. The bone readily yielded. The tissue contained a glairy matter—the embryo of scrofulous disease in the bone. This accounted for an aching pain which had been frequently felt during the last few months after exercise, and which the patient considered rheumatic.

Present state—Oct. 17th.—Had a good night; looks cheerful.

18th.—Going on well; stump cool; tongue improving; " the old bitter taste" has left his mouth.

19th.—Dressed the stump; removed one suture; wound looks healthy.

20th.—Offensive yellow discharge from the upper flap, just where the knife passed out in front of one of the fistulous openings; covered the part with lint made wet with an infusion of calendula. Ordered roast mutton for dinner.

21st.—Discharge offensive from ligatures; sol. potassæ permang. Dinner, roast partridge, with bread sauce.

22nd.—Bowels moved; had a small chop, potato, and rice; is not accustomed to stimulants, and therefore does not desire wine.

23rd.—Patient cool and comfortable; looks cheerful; windows open day and night; breakfasts at eight, cocoa, toast, and an egg; has beef-tea about noon; dinner at two o'clock; tea at six o'clock; baked apple, or something light, at nine o'clock p.m.

25th.—Discharge diminished; smell fetid; spirits good.

27th.—Felt sick, I fear from too good living; a cut from a sirloin! pulse 100; headache. Prescribed aconite, m. ii. ex. aq. ter. die.

28th.—Better; pulse lower; bleeding from inner angle of stump from the external saphena vein.

29th.—Oozing very much; touched the vessel with nit. argent.

30th.—Dull day; some pus from two openings.

31st.—Dull day; feeling of sickness; low spirits.

Nov 1st.—Bright day; patient better; two ligatures came away.

2nd.—Feeling sick; bowels moved.

4th.—Fine day; improving; two more ligatures have come.

15th.—Swelling in course of the remaining ligatures.

18th.—Came down stairs this day; looks much younger.

19th.—Better in health and spirits; less discharge.

20th.—Not so well; discharge over the ligatures.

21st.—Continues to go down to drawing-room.

25th.—Secured ligatures to a ring of india-rubber, with the hope that its elastic action would induce them from their fixed position. Patient went out in a chair.

26th.—Looks remarkably well; enjoys going out.

27th.—Lovely day; went on the grand pier.

30th.—To-day while testing the ligatures, each in turn gave way from some attachment, and came out half an inch. The ligatures were of the usual hospital housewife thread.

Dec. 7th.—Ligatures yet holding on; most troublesome. I have almost vowed against all ligatures, and purpose in future to twist and pin down arterial vessels.

23rd.—Patient left Brighton for home.

30th.—Letter after letter arrived about these ligatures. I tried several inventions, but the most successful was the drawing the ligatures through about two inches of a gum-elastic catheter No. 4; each day the ends were carefully rolled up like a little windlass.

Jan. 9th.—*Out* is the intelligence for to-day, and thus a great source of anxiety is also removed from me.

12th.—Patient's report:—" I thought you would like to know how I am getting on since the last ligature came away. I am glad to be able to give a most flourishing account. The stump has diminished in size considerably, and is firm and very healthy-looking. All discharge is stopped, except only to *mark* the lint during the day. Nothing more. The small places are healing up satisfactorily."

June 19th.—Patient writes:—" I am thankful to be able to report very well indeed of my new leg. I am doing very much better than I expected, and can walk quite easily and with *comfort*. In walking I can bend the knee and ankle-joint just as naturally as in the other limb. Also in sitting, &c., the limb bends most easily and naturally."

Feb. 10, 1869.—He now rides on horseback; appears to have grown taller by some inches; chest also increased in width; looks stout and well.

These details may appear tedious when compared with hospital reports, but will, I hope, be of interest to some of my readers. The case has many points for study. One is, that under the most favourable position, with a charming country residence, excellent diet, often the best surgical advice from London and in the country, an orthopedic surgeon of some note, sea air, &c., &c., yet the disease was of such magnitude that nothing could arrest its progress.

The second point was the great injury to the boy's health in battling with so much pain and suffering, by which his features were altered and his growth diminished.

An external point must here be considered—the anxiety of his parents and the distress to his sisters in being obliged to breathe the offensive odour which for many years followed in his track, and caused a train of distressing symptoms in one of the family, viz., depression of spirits, loss of colour, falling of the hair, languor, &c., &c. Since the amputation health has returned in this case, and all the household are stronger.

In conclusion, I may relate an evidence of the patient's close sympathy with his departed leg. The father expressed a wish to see the bones of the knee. On my next visit I unfolded them from a sheet of paper, and said that for a week I had to pour boiling water over them to extract the fatty matter which in the morning was floating on the surface of the water. The patient looked at

his mother and said:—"You remember my telling you every evening *but one* for a week how I felt as if hot water was poured on my knee."

*One* evening I omitted this performance! We were surprised at this conversation, and none more so than myself, for even the servants in my house, which is some distance from his lodgings, were not aware of the use to which I applied the water when called for.

This pathological preparation is now among the "organs of locomotion" in the Museum of the College of Surgeons, St. Stephen's-green, Dublin.

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ART. XXIII.—*Cases in Practical Medicine and Surgery.* By RICHARD J. HALTON, L.R.C.S.I.; L.R.C.P.E.; Kells, Co. Meath; Medical Officer to Moynalty Dispensary District.

I.—ACUTE RHEUMATISM—TYPHOID SYMPTOMS AND DYSPNEA, DUE TO DEEP SEATED ABSCESS IN NECK.

II.—PLASTIC DEPOSIT IN BRONCHIAL TUBE, GIVING RISE TO ANOMALOUS CHEST SYMPTOMS.

III.—NEUROSIS OF SENSORY AND VASO-MOTOR NERVES OF ARM DUE TO SUPPRESSED MENSTRUATION.

IV.—DELIRIUM TREMENS ALTERNATING WITH CONGESTION OF LUNGS.

V.—SLEEPLESSNESS IN FEVER, TREATED BY OIL OF TURPENTINE.

VI.—LARGE GLUTEAL ABSCESS TREATED BY THE DRAINAGE TUBE.

VII.—HYSTERIA OF AN AGGRAVATED CHARACTER.

VIII.—EXTEMPORIZED CHEEK COMPRESSOR.

IX.—TREATMENT OF THE DYSPEPSIA OF DISPENSARY PATIENTS.

CASE I.—Mary Walsh, aged twenty-eight, milliner, got ill on Monday. I saw her on Friday, March 3rd, 1863; I found her labouring under a severe attack of rheumatic fever pains in almost all her joints, furred tongue, quick pulse, and her skin bathed in profuse acid perspirations. I could discover nothing abnormal in the sounds of the heart. I ordered a mixture containing nitrate and chlorate of potash, and wine of colchicum, an aperient, and opium at night to procure sleep; I also prescribed opium and potash stupes for the joints. The treatment seemed to give some

relief, and the case went on very well until Sunday morning. At the time of my visit on that day, however, a most alarming change was apparent. All the symptoms had assumed a low typhoid type—pulse small and weak, tongue black, countenance dusky. These symptoms occasioned me great anxiety, for I was utterly at a loss to account for them. The heart sounds were still normal, though much weaker. I ordered beef-tea and brandy in alternate doses every half-hour.

I saw her again at two o'clock, p.m., but there was no improvement; she seemed to be getting weaker and weaker.

I was sent for hurriedly, about 9½ o'clock, p.m., with a message that she was dying. On entering the room I found her propped up with pillows gasping for breath, her pulse scarcely perceptible, and her whole appearance betokening speedy dissolution. I was informed by the attendants that she had been neither able to speak nor swallow for the last half hour. I was on the point of giving up the case as hopeless when I observed that though she was gasping for breath there was not that peculiar catch at the chin in the effort which is always present in the dying.

It struck me on the instant that she might be choking from some mechanical obstruction, and at the apparently imminent risk of suffocating her, I introduced my finger into her throat, and, immediately that I passed it into the pharynx, I thought I felt a swelling pressing on that cavity; I proceeded at once to examine the neck outside, and at the external third of the clavicle, but above it, I discovered the cicatrix of a scrofulous abscess, which I now learned for the first time had been discharging, but had ceased a few days before her illness. There was a very small aperture in it, from which a drop of pus was exuding; I introduced a probe and finding it sink deeply towards the pharynx, I enlarged the opening and gave exit to a large quantity of flaky pus.

The relief was immediate; she was able to swallow some brandy at once, and after a few minutes to speak.

This explained the typhoid symptoms satisfactorily, and the rheumatic fever having run the usual course, terminated favourably, without any further occurrence deserving of notice.

Case II.—J. B., gentleman farmer, aged sixty, robust constitution, was attacked in May, 1866, by acute pneumonia, after a prolonged exposure to the rain at night. The lower lobes of both lungs were affected, but he went through the attack well, and was

convalescent about the fourteenth day. At that time both lungs yielded a clear sound on percusssion, the sputum was perfectly free from tinge, and the respiration was natural, mingled, however, with bronchitic râles; his pulse was 80, his appetite improving; he was taking bark and ammonia, with an occasional aperient and an expectorant. He now, however, began to find himself uncomfortable on his left side, and he consequently lay on his back; his countenance had an anxious expression, and was slightly flushed. He got no stronger. There were times, particularly after meals, when he was uneasy and restless, but after repeated examinations I could find nothing wrong with him, he occasionally had a rather violent fit of coughing, but the sputum was bronchitic. Counter irritation by sinapisms and by croton oil liniment was freely applied to the chest. This state of things continued from day to day without any alteration for a fortnight; he did not appear to be worse; he certainly was no better. I gave him an increased allowance of punch, increased the strength of his mixture by the addition of quinine; still day after day passed and there was no improvement. Not liking this prolonged convalescence, I called to my assistance two of the leading practitioners in my neighbourhood. They examined him carefully, but could offer no opinion as to the reason of his delay on the road to health, and they continued the same treatment, slightly increasing the allowance of punch.

This made no alteration whatever in his symptoms, and he went on the same way for six or seven days longer, when being seized with one of his fits of coughing it proved unusually violent and prolonged, and ended by the expectoration of a firm bit of inspissated mucus, about the thickness of a quill, surrounded by blood, as if it had been forced out of a tube in which it was imbedded by the violence of the cough. From that moment all his symptoms disappeared; he was up three days after, and he rapidly regained his health and strength.

CASE III.—Jane Cahill, aged sixteen, domestic servant, complained of severe pain in the arm, awakening her at night; it gradually extended into the palm of the hand, and after persisting about an hour, the hand and arm began to perspire profusely, and the pain gradually ceased. The attack recurred again and again. The catamenia were absent. The arm was rubbed with compound iodine ointment, and menstruation established by suitable treatment, when the pain entirely disappeared.

Case IV.—T. N., aged forty-seven, gentleman, had suffered from delirium tremens twice, and still persisted in the habits which gave rise to the attack. His memory was greatly impaired, and his appearance altered for the worse—he was shrunken and old-looking, his hair turning to a greyish white. I saw him on June 2nd, 1866; he was then labouring under congestion of the lungs. The sputa consisted almost entirely of scarlet blood, a little mucus and some air bubbles being intermixed; râles all over the chest, which was still pretty clear on percussion. He was very low and weak. The congestion disappeared under the use of hot fomentations, turpentine stupes, &c., with moderate stimulants, liquid nourishment, and mild expectorants, and as the sputa became clear he grew excited; and finally, when the congestion disappeared, he presented a well-marked example of delirium tremens.

The delirium yielded after twenty-four hours to the use of opiate injections, and he awoke from a short sleep quite sensible, very low, and his lungs congested again. The same treatment was again adopted with precisely similar results.

Thus the phenomena of alternation between the congestion and delirium was repeated twice, when he gradually sunk, and died on the fourteenth day from the commencement of the attack.

Case V.—Master A. L., aged thirteen.

January 12th, 1866.—Saw him for the first time to-day. I was informed that he had been complaining since the previous day of soreness in his hip, which kept him in bed to-day. On examination I found there was tenderness on pressure over the joint, but no swelling, and the motions of the joint were unattended with pain. His pulse was 80, regular, but his tongue was rather foul, and his teeth and lips coated with brownish slime or pellicle. To have two grains each of calomel and antimonial powder to-night, followed in the morning by a tablespoonful of castor oil.

13th.—Passed a round worm, about eight inches long, this morning; complains less of hip, but has been awake and raving the whole night, wanting to get out of bed. His attendant says he slept some about three o'clock this morning, but as she herself admitted she dozed about that hour, I could not place much confidence in her statement. Pulse 120; tongue, browner and more coated, dry, and looking as if about to crack in the middle. His eyes are very bright, and though he spoke sensibly, but rather excitably, to me when I came in, and put out his tongue when

desired to do so, he began to rave away directly I stopped talking
to him.   I now found, on more particular inquiry, that he had been
ill some days before I saw him, and though he was down on a sofa
in the parlour, he was very often raving.   His friends attributed
his illness to his going out too soon after an attack of sore throat.
He did not complain of headache.   I also found that the night
before I saw him he slept none—at least he was talking the whole
time.   Under these circumstances I ordered him a mixture contain-
ing tartar emetic, hyosciamus, and spirits of nitrous ether, to be taken
every third hour.

I visited him at ten o'clock that night, and the moment I entered
the house I heard him shouting up stairs.   I found him more
excited than before, continually wanting to get out of bed, and
ordering about imaginary companions in a loud voice; still he put
out his tongue when desired to do so, and denied any uneasy
feeling in his head.   He had had three doses of his mixture, and
his attendants said it appeared to have made him worse.   I now
gave him fifteen drops of tincture of opium, and directed it to be
repeated at three o'clock, a.m., his nurse saying it was about that
time he was quietest.

14th.—Same state; no effect had been produced by the opium,
and he was still talking incessantly.   I now ordered him a draught
containing a scruple of tincture of opium every three hours, had
his hair cut off, and, as the belly was somewhat tympanitic, had a
terebinthinate enema administered, which merely brought away some
flatus.

I saw him again at eleven o'clock at night, and found him much
worse.   The opium had produced no effect; he was not talking so
loud, but muttering rapidly, and he constantly groped about with
his hands, and had a wild look.   His pulse was weak and rapid,
and a great degree of subsultus had set in which prevented me
feeling it accurately.   His teeth, tongue, and lips were black with
sordes.

He was now without sleep, as far as I could ascertain, for more
than seventy-two hours, and would not probably live more than
four or five longer if unrelieved.

I determined, therefore, to try the effect of oil of turpentine, and I
immediately administered a large teaspoonful, containing, I should
say, about a drachm and a half made into punch, and directed it to
be repeated every second hour, with a tablespoonful of port wine
every half hour.

The first dose of turpentine seemed to make him rather excited; after the second he was quieter, and after the third he dropped asleep.

15th.—I found the subsultus gone, the pulse 120, regular, and the breathing quiet. He started occasionally, muttered some, but was evidently asleep all the while. I directed him to be occasionally roused and fed with chicken jelly.

He slept all that day, through the night, a good deal of the next day, the next night—taking his nourishment at intervals—and on the following morning he was free from fever.

He rapidly and completely recovered.

CASE VI.—W. J., aged twenty. The subject of the present case was clerk in a mercantile office, and his previous history is as follows:—

About the 1st of August, 1866, he got a pain in the open of his right side, as he expresses it. He let this go on for two months, until it moved to the groin also; he then applied for advice, and, under the care of several practitioners, he was alternately leeched, blistered, and cupped, time after time, without the slightest relief until March, 1867. At this date a small lump appeared in the groin; it was painted with iodine, and about the beginning of April a small lump appeared under the hip-joint; this gradually enlarged, and as it did so the first disappeared. His health now began to fail: he was annoyed by a harrassing cough, night sweats, &c., and he appeared gradually sinking. The disease had been pronounced to be spinal.

He came under my care June 27th, 1867. The leg was drawn up, the thigh flexed, and the back stooped, while an enormous abscess occupied all the gluteal region on the right side, stretching down the thigh, on its anterior and lateral aspect, to within about three inches of the patella. After a careful examination of the tumour, I came to the conclusion that it was not connected with the spine. On examining the chest I found the lungs perfectly healthy—the cough was merely a cough of irritation, and yielded at once to a pectoral mixture containing hydrocyanic acid. I then put him on large doses of infusion of bark, with chlorate of potash and syrup of iodide of iron, and under this treatment his health rapidly improved. As soon as I thought him fit to bear the drain which would necessarily result from the opening of so large an abscess (it measured thirteen inches by ten), I introduced a trochar

and canula right through it, and put in Chassignac's drainage tube.
An immense quantity of pus, laudable enough and without smell,
came away for the next few weeks; and on the 7th November, two
months from the day it was opened, the discharge was so trifling,
not amounting to more than a teaspoonful in the twenty-four hours,
that the tube was withdrawn and the leg bandaged.      He now
began to walk about, gaining flesh and strength every day, until the
13th of December, when he was suddenly attacked with obstinate
vomiting, quick pulse, and perspirations.    On examining the thigh
I found some matter had burrowed down between the muscles on
its external aspect.    I introduced a trochar through the lower hole,
which remained open since the former operation, and following the
sinus down, brought it out at the lowest point possible, reintroduced
the tube, and gave exit to a large quantity of sanious pus.    The
vomiting stopped the next day, and the bark, iodide of iron,
&c., was at once resumed.   About the middle of February the tube
was removed, and by the end of March the abscess was healed
through its whole extent.   He then began to walk about, getting
fatter and fatter every day.   He continued the iron and bark, and
he is now (more than a year having elapsed) quite well; all stiffness
being removed and the motions of the joint entirely unimpaired.
He has adopted a more active life, and has passed the last few
months directing and superintending farming operations.   He is
fatter than he ever was before.

Case VII.—Miss A. B., aged thirty-six, unmarried, a teacher
of languages; she came under my care in the earlier part of last
year; I found her suffering from an attack of acute abdominal pain,
with a rapid pulse, flushed face, and some tenderness, but evidently
of a hysterical character, as it was much less when her attention
was otherwise engaged.   The attack yielded promptly to draughts
containing half a drachm each of chlorodyne, sulphuric ether, and
compound spirits of ammonia.

On visiting her next day, I learned she had been confined to her
room for the past eight years, and for the most part of that time to
her bed.   She had been treated by various medical men, but had
received no benefit.   After a careful examination, I came to the
conclusion that all her organs were healthy.   Her appetite was
pretty fair; and she was very well nourished for one so confined.
She complained of weakness in her limbs and back, and some slight
leucorrhea.   There were various foods which she averred she

could not digest, and others much more indigestible she assimilated with ease.

I commenced with a careful course of valerianates, both of iron and quinine, with an occasional bitter infusion; regulating the bowels with aloes and assafœtida, with small doses (one-thirtieth of a grain) of strychnia and croton oil, as they were occasionally very obstinate. I encouraged her, meantime, to hope for a speedy and favourable issue to the treatment, carefully attending to all her accounts of local pain; applying belladonna and opium plasters when the uneasiness was referred to the chest or back, and hot stupes when the abdomen was affected. Under this treatment she was up in a month; and in three from the time of commencing the treatment, she walked five Irish miles, somewhat to the surprise of her friends, who had been expecting her death for months.

She has since (nine months ago) remained perfectly well, and has resumed her profession as a teacher.

I have since met with a similar case, which promises to turn out as favourably.

CASE VIII.—This is the case of an infant whom I had occasion to operate on for the removal of a deformity, occasioned by the almost total absence of the upper lip; the left ala of the nose being incorporated with the cheek, and the sutures having given way, I was obliged to extemporize a cheek compressor. I managed it by breaking off two small trusses in the middle, and tying firmly the broken ends together. I placed a pad on either cheek, tied the perineal bands behind the head to prevent it slipping forward, and brought the straps across beneath the chin. Thus adapted it suited very well, and procured a successful result to the operation.

Before I conclude I wish to mention, in reference to a form of dyspepsia very common in dispensary practice in Ireland, usually called potato stomach—characterized by pyrosis, often profuse, and considerable pain—that I have found, after many trials of various medicines, that a powder composed of one grain of quinine, three grains each of soda and compound kino powder, and eight grains of bismuth, taken three times a day, will usually produce a speedy and effectual cure—a mild aperient being generally necessary every second night during their administration.

# PART II.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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### *RECENT WORKS ON DISEASES OF THE EYE.*

1. *Treatise on the Diseases of the Eye; including the Anatomy of the Organ.* By CARL STELLWAG VON CARION, M.D., Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the Third German Edition, and edited by CHARLES E. HACKLEY, M.D., Surgeon to the New York Eye and Ear Infirmary, Physician to the New York Hospital, Fellow of the Academy of Medicine, &c.; and D. B. ST. JOHN ROOSA, M.D., Clinical Professor of the Diseases of the Eye and Ear, in the Medical Department of the University of the City of New York, &c. With an Appendix by the Editors. Illustrated by ninety-six wood engravings and eighteen cromo-lithographs. London: Robert Hardwicke, 192, Piccadilly. 1868. 8vo, pp. 774.

2. *A Manual of the Diseases of the Eye.* By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital, Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College. London: John Churchill and Sons, New Burlington-street. 1868. Pp. 571.

3. *A Treatise on the Diseases of the Eye.* By J. SOELBERG WELLS, Professor of Ophthalmology in King's College, London; Ophthalmic Surgeon to King's College Hospital; and Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfields. London: John Churchill and Sons, New Burlington-street. 1869. 8vo, pp. 741.

4. *An Improved Method of Extraction of Cataract, with Results of 107 Operations.* By J. R. WOLFE, M.D., F.R.C.S.E.; Ophthalmic Surgeon in the Aberdeen Royal Infirmary, and the

Aberdeen Eye Institution; Lecturer on Ophthalmic Surgery in the Aberdeen Medical School. With Illustrations. London: John Churchill and Sons. 1868. Pp. 71.

5. *The Theory of Ocular Defects and of Spectacles.* Translated from the German of Dr. HERMANN SCHEFFLER, by ROBERT BRUDENELL CARTER, F.R.C.S. (Exam.); Fellow of the Royal Medical and Chirurgical Society; Consulting Surgeon to the Gloucestershire Eye Institution. With Prefatory Notes, and a Chapter of Practical Instructions. Pp. 262. London: Longmans, Green & Co. 1869.

THE almost simultaneous publication of such works as those above enumerated, shows the very great interest taken at present in ophthalmic medicine, and the works themselves confirm the truth of what we have more than once remarked concerning the great progress made of late years in ophthalmology. We have from time to time noted and commented upon the advances and discoveries which have been recently made in this branch of medicine, and we would now again invite our readers' attention to the subject, which has especial interests for the Irish practitioner who has to deal daily with affections of the eye. And in mentioning Ireland, we are struck with the curious and surprising fact that there is no professorial chair of ophthalmology in that country. We cannot but regard this as an anomaly, more particularly when we consider the great prevalence of eye diseases and the fact that in no other country save Norway is the proportionate number of blind so large as in Ireland. While nearly every foreign university and some at least of the English and Scotch Universities and all the principal medical foundations in England have their acknowledged professor of ophthalmology, Ireland does not possess in any of its schools even a lecturership on the subject. Neither the state, the universities, nor other corporate bodies in this country have as yet followed the example of liberal and thorough education set them by the foreign universities. Private enterprise and philanthropy have effected much, but we consider that something more than private efforts are necessary to spread abroad a knowledge of eye diseases in such a country as Ireland, where ophthalmia in its various forms is both epidemic and endemic and a real scourge. In the preface to his manual Professor Macnamara says, " The Senate of the Calcutta University wisely insists on students coming up for examination, not only producing certificates of having attended an

Ophthalmic Hospital and lectures on the subject, but that each shall pass a clinical as well as a written examination. The student has therefore to satisfy the examiner as to his ability to diagnose various diseases, and prescribe for one or more patients brought before him; and as these cases are chosen promiscuously from among persons attending the hospital, the test entails a practical acquaintance with the principles of ophthalmology."

Stellwag's book has become the standard work and text book not only of the Germans but of the German-understanding practitioner all over the world, being rivalled only by Wecker's *Études Ophthalmologiques.* There is however a large number of medical men to whom the German edition is a sealed book, and there are few amongst us who do not prefer our own to a foreign language. We are therefore under a debt of obligation to Drs. Hackley and St. John Roosa, for having in the present edition placed this work within the reach of all English-speaking practitioners. While acknowledging our indebtedness to the translators for their meritorious efforts and before considering the contents of the work we would point out the two circumstances which we would principally take exception to;—these are the quality of the translation, and the fact of the work being merely a translation; matters perhaps of minor importance and of mere opinion. One of the merits of the work is undoubtedly that of being an almost literal translation, but then the style of its diction and composition, its expressions and idioms are sometimes so German and so unlike our own habits of thought and our accustomed language that its perusal will be rendered unpleasant to the non-German scholar; the mental effort which should be concentrated on seizing and retaining the author's views and opinions is occasionally diverted from its legitimate objects by the peculiarity of language. Knowing as we do the peculiar style and phraseology of the original we are fully alive to the difficulties which the translators must have encountered in their arduous undertaking of rendering into fluent English the long and involved sentences and compound words of the author, and we must make due allowance for the occasional technical peculiarities of the translation, more especially as the sense and meaning of the original have been truthfully retained. Remembering with feelings of pleasure and gratitude Hay's American Edition of Lawrence and Warlomont and Testelin's French edition of Mackenzie we had anticipated in the American edition of Stellwag, a somewhat similar annotated work; but in

this we have allowed ourselves to be disappointed, the work is very little more than a simple translation, nor do the editors themselves claim much more for it. The additions consist of a few short isolated notes respecting American authorities and an appendix comprising five pages of translated extracts and some woodcuts from Zander together with a set of Jaeger's test-types, inferior, we believe, in scientific accuracy, to Snellen's. The work though styled an American edition, by Stellwag, is published in London. Beyond the few scanty references to British authorities contained in the German work there is no allusion to British labours and British writings in the American edition, and such references would not only be courteous and graceful in a work destined to a certain extent for the profession in these countries but are in some instances absolutely called for and necessary. Many examples might be mentioned, but we will adduce only one and take it in particular as it relates more especially to the Irish School of Medicine. At p. 437 we find the heading *Basedow's Disease*, and as in the consideration of that disease there is no allusion to any but to continental labours if we except the French edition of Mackenzie, mentioned in the enumeration of *authorities* at the end of the chapter, the student and others might naturally be led to infer that the British schools had no claim to allusion. Now what is Basedow's disease? Although an affection which comes more within the province of the physician than of the oculist we venture to assert that few of our practitioners will recognize under that title the well-known *Graves' Triple Disease.* Practically it is of little moment by what name we designate a disease so long as we understand the nature of that disease and that the name conveys with it certain ideas, but there are other considerations which make it incumbent upon us to associate in medical nomenclature certain names with certain diseases, accidents or discoveries, and to retain that association unless good cause can be shown for the severance. In the present instance we claim to retain Graves' name in association with this cardio-thyroid exophthalmus, or exophthalmic goitre on the grounds of priority; Graves described it in his *Lectures* in 1835; Basedow's article did not appear until 1840; Dr. Stokes in his masterly and philosophic work on the *Heart and Aorta* gives the credit of its first true description and recognition to Graves. It is an interesting fact that some of the earliest as well as the most recent writings on this subject appeared in the pages of this journal, and that one of the first *post mortem* examinations ever made on a subject affected

with this malady was communicated to the Dublin Patholo-
gical Society by the late Sir Henry Marsh in 1841, and
subsequently published in this Journal. Both Macnamara and
Wells style the disease after Graves. The technical shortcomings
we have just alluded to do not however detract from the very great
merit of the work itself, which is a most learned and scholarly
treatise; it is especially valuable in bringing before us the doctrines
and practices of the present-day German ophthalmic schools of
which Stellwag is one of the acknowledged leaders. In the pages
of this work will be found a rich mine of pathological information
which is surpassed in none and equalled in few similar works.
The work is well illustrated; many of its woodcuts as well as much
of its matter will be already familiar to the reader as they have
been largely copied by various authors. In the following pages
we propose to consider the three works at the head of our list both
collectively and individually.

Stellwag's introductory chapter is one of the most interesting and
practical in the work; it contains general directions and observa-
tions on the treatment of eye diseases, on the means employed and
the manner of employing those means; in discussing antiphlogistic
remedies and the use of mercury he advocates the inunction treat-
ment; so likewise does Wells, and Macnamara who, as we shall
see, is rather an opponent of mercury, recommends the mineral to
be used by means of the vapour bath. We would hesitate
however in following Stellwag's practice in the administration of
corrosive sublimate; he orders two grains of this mineral to be
made into thirty-two pills and says "one pill is to be taken night
and morning on an empty stomach; and every two to three days
increase the dose, until half a grain has been reached, and again
the dose is to be diminished at intervals of two days." We should
expect half a grain of corrosive sublimate in an *empty* stomach
would produce very unpleasant effects. In treating of *Narcotics*,
Stellwag says:—

" Recently, hypodermic injections have been very much used, and indeed
this method has much to recommend it above the others. We are more
certain that the remedy has been taken up, and its effects appear quicker
and are more permanent and complete, then when it is used internally.
The effects are often seen within a half a minute. This method is par-
ticularly to be recommended in accidents which threaten loss of life,
poisoning, &c., the constitutional effect appearing in the shortest time.
But undoubtedly local effects are also secured by the hypodermic

injection of narcotics, and with this an especial curative action, as observations in reflex spasms prove, where we can most accurately determine as to the seat of pressure. These injections are best made by means of Luer's improved syringe, or Prava's. The most appropriate point for the injection, when we wish a constitutional effect, or when we desire to subdue pain in the orbital region, is the centre of the temple. In other forms of neuralgia, and in reflex spasm, the seat of pain or the predominent seat of pressure should be chosen for the injection. We should pinch up a fold of integument, lifting it up well, but releasing it after the entrance of the point of the needle. If this be not done, the fluid will run out. For an anæsthetic effect, a solution of one of the salts of morphia is used, four grains to the drachm. The syringe is filled with this, and the fluid injected until the mark 7—9 on the handle is reached, when about 1-6 or 1-5 of the alkaloid has been injected. The solution should be perfectly clear and neutral. The primary excitement after the hypodermic injection of morphia is apt to be much more severe than on the internal use. Nausea and vomiting occur more readily, which is a point to be considered; still this reaction quickly passes away. This treatment is particularly to be recommended after injuries and operations, when we wish to alleviate severe pain in neuralgia also, without eye disease and in reflex convulsions." (*Graefe.*)

"The local reaction caused by the wound itself is almost always extremely slight, if the point of the instrument be sharp enough, and it be used with care. In no case is there any danger to be apprehended from the wound, and from the entrance of the fluid into the sub-cutaneous cellular tissue. Sometimes, however, fortunately in very rare cases, the point of the instrument enters a sub-cutaneous vein, and thus the solution is injected directly into the blood. The symptoms are then very alarming, and they appear with the rapidity of lightning. They are a severe burning and cutting sensation over the entire skin, a strong acid taste on the tongue, a dark reddening of the face, tinnitus aurium, flashes of light, and very severe pain in the scalp. Added to these symptoms, there is an extremely powerful and rapid movement of the heart, and in some patients loss of consciousness and convulsions. These symptoms last for some minutes; but in all cases which have as yet been observed, they pass away without harm.

"This accident indicates an important rule, which is, to inject very slowly, and on the appearance of the symptoms in question to stop immediately, and draw the fluid back into the syringe. The reaction appearing with such lightning-like rapidity, this may be easily done. When there is any danger of apoplexy, from a morbid condition of the vessels, venesection should be performed as quickly as possible." (*Nussbaum.*)

Both Wells and Macnamara speak highly of this subcutaneous

injection of morphia, and we ourselves can from practical experience speak of its beneficial effects.

Much misunderstanding and discussion have of late years arisen respecting the name and nature of *trachoma;* this term was employed principally by what we may style the Prague School to denote exclusively that conjunctival affection in which a peculiar neoplastic growth resembling fish or frog spawn or boiled sago or tapioca grains makes its appearance in certain parts of the conjunctiva. These trachomatous bodies are carefully to be distinguished from the papillæ which are normal anatomical structures of the conjunctiva and which in certain conditions of that membrane become enlarged and receive the name *granulations.* This fine distinction gave rise to a good deal of confusion, and we have seen in Germany the same state of parts termed by one teacher trachoma and by another granulation. This confusion as might be expected has grown worse confounded in the minds and utterances of the pupils attending the various cliniques. Stellwag has a long and exhaustive treatise on the subject and uses the two terms trachoma and granular conjunctivitis synonymously; he divides this form of disease into—1, pure granular; 2, papillary; 3, mixed; and 4, diffused conjunctivitis. We consider this classification a very simple and practical one and would desire to see it adopted; we think also it would be well to follow his nomenclature, and when in the following pages we use the term trachoma we use it synonymously with granular conjunctivitis; in writing or speaking however it would be well to specify the variety of the disease. Stellwag's first variety comprises the frog spawn-like neoplasms only or as they are called by Arlt, Pilz and others true trachoma; his second is confined to the papillary region of the conjunctiva and consists in a proliferation of the papillæ; his third is a mixture of these two and is the common form met with; the diffused variety is described as " a higher grade of development than the mixed trachoma, and is distinguished by the amount of neoplastic formation in and upon the conjunctiva, as well as by the ordinary participation of the cartilage, of the integument, and the cornea." Both Stellwag and Wells enumerate amongst the causes of granular conjunctivitis the long-continued use of atropine; though the latter author says he has " met with some striking examples of this;" we ourselves are sceptical on the matter. Macnamara seems also to entertain some doubt on the subject as appears from the following :—

" It is a remarkable fact, that a prolonged application of atropine to
the surface of the conjuctiva appears to give rise to granular conjuncti-
vitis ; at any rate, one sees this form of disease arising after the long-
continued instillation of atropine. Unless, however, it were positively
ascertained, that the neoplastic growths peculiar to this affection had no
existence prior to the instillation of the alkaloid, I should not be disposed
to admit the connexion of cause and effect. Many of these patients have
been placed under conditions exceedingly favourable for the development
of granular conjunctivitis, having probably taken no inconsiderable
amount of mercury for the cure of iritis, and having at the same time
been reduced by antiphlogistic measures, adopted to control the inflam-
mation. Before, therefore, ascribing to atropine any peculiar property
of developing granular conjunctivitis, I should like to watch its effects on
a perfectly healthy eye ; it may only act as an irritant, developing a pre-
existing form of disease."

Wells' chapter on diseases of the conjunctiva is interesting and
like the rest of his work practical; he ignores the term trachoma,
but insists on the name *granular lids* or *granulations* being applied
only to the fish-spawn-like neoplastic formations—the granular
trachoma of Stellwag. The following remarks from Wells are
well worthy our careful attention :—

" Before proceeding to the consideration of granular ophthalmia, I
must call especial attention to a peculiar vesicular condition of the
conjunctiva, which is frequently premonitory of that affection. It is a
matter of surprise that this condition, which has been so carefully and
elaborately described by several eminent continental writers, more
especially Stromeyer, Bendz, and Warlomont, should have apparently
altogether escaped the attention of many English ophthalmic surgeons;
indeed, we are principally indebted to two distinguished English military
surgeons for giving this subject due prominence in our medical literature,
and calling the attention of the profession, and more especially of army
medical men, to a condition of the eye which is very important to all
who have the charge of large bodies of men, *e.g.*, soldiers, paupers,
convicts, &c.

" This vesicular condition of the conjunctiva is distinguished by the
following symptoms :—On everting the lower eyelid, we notice upon it
small, round, transparent bodies like little sago grains or herpetic vesicles,
which are situated directly below the epithelium. They mostly make
their appearance first on the lower eyelid, and may, indeed, remain
confined to it, but they generally extend to the upper eyelid, and I have
seen a few rare instances in which they encroached considerably upon

the ocular conjunctiva. The vesicles are sometimes isolated and but few in number, being sparsely scattered about the conjunctiva especially near the outer angle of the eye. In other cases they are studded thickly over the palpebral conjunctiva and retro-tarsal fold. They cannot be emptied of their contents by pricking, and differ in this from the sudamina of herpes, and the serous elevation of the epithelium of the conjunctiva, which is occasionally met with in catarrhal ophthalmia; moreover, in the latter condition the vesicles are much larger. The vesicles consist of a stroma of connective tissue containing nucleated cells like lymph corpuscles with a little fluid. They are surrounded by a delicate layer of condensed connective tissue, which has no proper enveloping membrane, but passes over into the neighbouring less condensed tissue. With a fine needle we may often succeed in removing them entire. They seem to be identical in structure with the closed follicles of the intestines, &c. Sometimes these vesicles appear without any change in the conjunctiva. Generally, however, there is an increased vascularity of this membrane with some swelling, more especially at the retro-tarsal fold. The vessels of the conjunctiva are very apparent, and often of a dusky bluish-red colour, sending small branches towards the vesicles, which may appear arranged in rows like little transparent beads. But this hyperemic condition may sometimes mask the presence of the vesicles, especially if they are small and not very numerous, so that they might readily be overlooked by a superficial observer. If the conjunctiva is however examined through a magnifying glass, they will be easily distinguished.

"If the hyperæmia of the conjunctiva is but slight, these vesicles may exist for a very long time, for months or years, without producing any sensible discomfort or symptoms of inflammation. The patient may either be quite unaware that there is anything the matter with his eyes, or he may only notice a slight sensation of pricking or itching in the eye, the lashes being somewhat glued together in the morning. There may also be a tendency to irritability of the eyes during reading and writing, more especially by artificial light. Sometimes, however, even these symptoms are entirely absent.

"This vesicular condition of the conjunctiva is due to an enlargement of the closed lymphatic follicles of Krause, which are situated directly beneath the epithelium, and which are not apparent in a normal state of the conjunctiva, but become swollen and enlarged when this membrane is in an irritable condition. Stromeyer called special attention to these vesicular granulations, but supposed that they were pathological products and did not exist in a healthy conjunctiva. The researches of Krause and Dr. Schmidt of Berlin have, however, distinctly proved that they are physiological organs, which are not apparent to the naked eye whilst the conjunctiva is in a normal condition, but are apt to become enlarged into these sago grain vesicles from a proliferation of their contents, more

especially of their connective tissue elements, when there is any chronic irritation of the conjunctiva.

"Now it is a very important question, and one which has not at present received a decided and satisfactory answer, whether the true granulations are developed from these vesicular bodies, or rather the follicles of Krause, or whether they are a distinct neo-plastic formation, due to a proliferation of the contents of the connective tissue cells of the conjunctiva. The former view is maintained by several observers of eminence, more especially Bendz and Stromeyer. But one weighty argument against this view is furnished by the fact that true granulations sometimes occur in situations where these follicles are more or less completely wanting, as for instance on the ocular conjunctiva. Wecker strongly advocates the view that the true granulations are neo-plastic formations, akin to tubercle, and are due to a proliferation of the contents of the connective tissue cells, and that they consist of a mass of closely packed nuclei with little or no connective tissue between them. At a later stage the connective tissue becomes increased in quantity, and forms a semi-transparent, gelatinous, grumous mass containing a small quantity of fat. The nuclei diminish in number, and are finally only sparsely scattered amongst the connective tissue. It is an important fact that this gelatinous mass becomes transformed at a later stage into a dense fibrillar tissue, and that the latter shows a great tendency to contraction, thus causing more or less destruction of the true conjunctival tissue. A firm cicatricial tissue is formed, which gives a streaky tendinous appearance to the inner surface of the lids; the latter gradually become shortened, the retro-tarsal fold almost obliterated, the tarsal cartilages incurved, thus giving rise to trichiasis and entropion. . . . . . .

"But whether we accept or not the theory that vesicular granulations are the first symptoms of granular ophthalmia, and may become developed into true granulations, there cannot be the slightest doubt that they must be regarded as a strongly predisposing cause of the latter. It is, therefore, of great importance that their existence should be detected as early as possible, more especially where a large number of persons are collected together, as in barracks, workhouses, and schools. For this vesicular state of the conjunctiva must be watched with care and anxiety, as it chiefly occurs in individuals living in a confined and vitiated atmosphere, and under faulty sanitary arrangements. Proper hygienic measures should, therefore, be at once adopted, and the patients, if necessary, submitted to treatment; for if these vesicular granulations be allowed to exist unchecked, and such eyes are exposed to the usual irritating influences met with in marches and encampments, as for instance exposure to wind, dust, draughts of cold air or bright glaring sunlight, an epidemic of granular ophthalmia is but too likely to break out, the ravages and extent of which cannot be foretold. . . . . . . . .

"It is, therefore, of much importance to discover the presence of vesicular granulations as early as possible, in order that the hygienic conditions of the ward or sleeping apartment of the patient may be thoroughly examined. Such patients should be placed in large, airy, well ventilated rooms, which are not exposed to the bright sunlight. Strict orders should also be given that the same sponges, towels, or waters are not used for others. Indeed, it is advisable that even healthy persons should always wash in fresh water. It is better to separate those affected with vesicular granulations from the healthy, for I think that there can be little doubt that vesicular granulations are contagious, more especially when they are accompanied by conjunctival swelling, and a little muco-purulent discharge."

The contagious character of granular conjunctivitis should never be lost sight of. So decided is Liebreich's views as to its contagious nature and such a dread has he of infection that he has separate hours and days for its treatment, and we have seen him hurriedly separate and dismiss a trachomatous person from amongst his other patients the moment he discovered the malady. Stellwag says :—

"Contagion plays the most important part. The number of cases caused in this way is at any rate in excess, especially in places in which a great number of persons live together, and come in contact, or use the same washing materials, as is apt to be the case in barracks, workhouses, hotels of the lower class, &c., [asylums, schools, and even hospitals.] If in such places a number of persons once become affected with trachoma, and if these are not carefully separated from the healthy ones, the number of those affected increases very rapidly. Thus contagion becomes an important factor in the development and extension of certain endemics and epidemics, which have become a permanent plague. In the same way may be explained, by the contagious property of trachoma, the examples of the disppearance of the disease from the place where it originated, to appear in branches of the family or in entire households who were in places completely free from the disease, and who were not exposed to the noxious influences which first excited trachoma.

"The purulent and muco-purulent secretion of a trachomatous conjunctiva must alone be considered as the bearer of the contagion. The watery secretion of the pure granular trachoma, as well as the turbid mucous product of ancient papillary, mixed, and diffuse trachoma, which contains no pus-elements, is scarcely contagious, or only very slightly so.

"The destructive power of the conjunctival secretion is the greater in proportion to its resemblance to pus, and the severity of the inflammation."

Wells states that—

"Defective hygiene and contagion are also the chief causes of chronic granulations. The muco-purulent discharge is very contagious, and may re-produce a similar affection, or it may cause catarrhal, purulent, or even diphtheritic ophthalmia, just as, conversely, these diseases may produce granular lids.

"It is probable that, as in purulent ophthalmia, the disease may also be propagated by the air, more especially if it is accompanied by severe purulent discharge, and the cases are crowded together in small, close, ill-ventilated rooms. The disease may occur epidemically and endemically. It spreads rapidly among the inhabitants of closely-crowded dwellings, such as barracks and workhouses. It is very prevalent amongst certain nationalities, where the people are crowded together for a length of time in small dirty cabins, filled, perhaps, with smoke and ammoniacal exhalations. Thus it is very common amongst the poorer Irish, and also amongst the Russian peasants (Wecker)."

The disease is also called *Military Ophthalmia,* and the following are some of the conclusions arrived at by M. Warlomont from an analysis of the lengthy discussion on the subject by the Royal Medical Academy of Belgium, and which we extract from Macnamara's work :—

"I. Military Ophthalmia, also called contagious ophthalmia, granulous ophthalmia, &c., is an affection essentially transmissible, and subject to easy and frequent relapses. Those who have been affected by it are never sure of a perfect cure.

"II. If it be true, as some state, that it can arise spontaneously in civil populations, it is as surely established, on the other hand, that in all the countries of Europe, where its presence has been assured, it has always commenced in the army, and spread itself from them among other classes of the population.

"III. In Belgium, especially, it has been proved that before 1834 it affected the army almost exclusively. It was only after this period, and dating from the disbanding of those affected by granulations, and their return to their homes—a measure ordered by the Minister of War, on the proposition of the Sanitary Inspector-General of the Army, and sanctioned by the Commission of Inquiry and by Professor Jünken of Berlin—that its extension began among the civil population.

"IV. The isolation of individuals affected with military ophthalmia in all its stages is imperatively demanded by the contagious character of the affection. Beyond this prophylatic measure, it is not possible to retard or extirpate the disease. To send back affected patients to their homes is, therefore, a dangerous and irrational proceeding."

We cannot be too particular in impressing upon trachomatous patients and their friends or attendants the contagious nature of the malady, nor can the surgeon himself be too careful in guarding against carrying the contagion either to himself or to his patients. We have known instances of both. Especially in workhouses and in dispensaries the medical attendant should thoroughly cleanse his fingers and appliances after the inspection and treatment of a trachomatous patient. Other important matters forbid our entering at length into the treatment of granular conjunctivitis. We may mention that the various highly extolled remedies are either omitted by Stellwag or alluded to only disparagingly; thus sugar of lead, tannic acid, tincture of opium, dilute nitric acid, &c., are stated to be far inferior in their effects to nitrate of silver and sulphate of copper; he says, " the scissors, nitrate of silver, and sulphate of copper are the direct means of treatment of trachomatous neo-plastic formations," and dwells strongly upon the isolation of the affected.

Wells deprecates the use of strong solutions of nitrate of silver and lays stress upon the fact that the object of cauterization should not be to destroy the granulations chemically, whereby the conjunctiva would be very seriously injured and its functions impaired, but to excite and maintain such a degree of inflammation as will facilitate the absorption of the granulations. Macnamara's chapter is also sound and trustworthy, but there is one part of his practice which seems, to say the least, energetic; when the inflammation is more than adequate to produce absorption of the granulations, and

" That it is endangering the vitality of the cornea, we must at once control its action by means of nitrate of silver and cold compresses. In the first instance, a five-grain solution of nitrate of silver should be dropped into the eye every second hour, and cold compresses constantly applied over the lids in the interval; it may be well at the same time to administer a purgative, and if the patient is in pain, a grain of opium should be given three times a day. Should the disease, in spite of this treatment, gain ground, we must increase the quantity of opium to two grains three times a day, and having placed the patient under the influence of chloroform, smear the chemosed conjunctiva over with the dilute caustic pencil. Let it be distinctly understood, however, that this treatment will only be necessary when the cornea is in danger, but that it is then probably the sole means upon which we can depend for the preservation of the eye."

Two grains of opium three times a day would, we think be

inadvisable in ophthalmic practice in this country; it would no doubt enable us to apply the five-grain solution every second hour, for the patient would be insensible to the consequent pain.

The treatment of Trichiasis and Entropion have given rise to a great deal of discussion, and to several new operations of late years. Two of the principal operations for the removal of these conditions have been described in the early numbers of this journal by Sir Philip Crampton and by Sir William Wilde. The latter removes the entire ciliæ with their hair bulbs and this is we believe to be the only radical and effectual cure for the disease. We are glad to find so eminent an authority as Stellwag taking the same view; he says:—" In order to give a proper direction to the ciliæ, but not to destroy them, a great number of operations have been suggested. All of them, however, accomplish their purpose imperfectly." After describing the transplantation operations, he says, " the removal of the hair-follicles is certainly the most trustworthy method. It is also simpler and more easily done." We have for some time past practised a modification of Sir William Wilde's operation, which consists in removing, instead of transplanting, the flap formed in Arlt's operation, the only advantage over Wilde's operation is that the patient is in the recumbent position. This operation we now find described in Stellwag. Wells has devised an operation which is a combination of Arlt's and Streatfeild's, and by which he has he says " succeeded in curing severe cases of entropion with marked contraction and incurvation of the cartilage."

Stellwag's section on *Tumours* possesses very great interest, especially for the pathologist. The classification is the same as that adopted by Virchow. Based on their anatomical origin he describes three principal groups of tumors in and around the eye: " The first class comprises tumors composed of blood, or materials coming directly from the blood, contained in natural or mechanically formed spaces, such as *extravasations*, *transudation* and *exudation* tumors. The second class comprises tumors due to collections of secretions proper, in existing cavities, such as *retention* and *dilatation* tumors. The third class represents growths, the true new formations or pseudoplasms, which grow immediately from the structure of the organs, originating in actual formative processes, or a true proliferation of tissue. (Virchow.)" To these a fourth class is added, which includes tumors caused by *hydatids*. The seat and mode of origin of these tumors, their microscopical

characters, pathology, symptoms, and treatment, are dealt with in a masterly manner, and we can refer our readers to this, as well as other portions of the work, with the confidence and certainty that they will be amply rewarded.

<div align="center">(*To be continued.*)</div>

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*On Pyemia or Suppurative Fever ; being the Astley Cooper Prize Essay for* 1868.  By Peter Murray Braidwood, M.D., L.R.C.S., Edinburgh; late President of the Royal Medical Society of Edinburgh.  London: John Churchill.  1868.  Pp. 287.

This is an exhaustive work on the subject of which it treats.  The author commences with an historical review of the subject which shows great research and which is done with scrupulous care.  He next discusses the nomenclature of the affection, which is found to be as varied as the theories which have existed as to its causes. Dr. Braidwood prefers the designation " suppurative fever" to pyemia.  We admit the soundness of his objection to the name pyemia as a term connected with a theoretical origin of the complaint now considered to be incorrect.  Suppurative fever is, however, a title already given, or at least very generally assigned, to a condition quite unlike that to which Dr. Braidwood would now apply it.  From this much confusion will inevitably arise; and this is a matter to be regretted, inasmuch as a good deal of attention has been recently bestowed by scientific surgeons on the varieties of fever accompanying inflammation, suppuration, and wounds, and it is in the highest degree desirable that these forms of febrile disturbance, when they do really present distinct features should be discriminated from each other by distinctive appellations.

Purulent fever would, we venture to suggest, have been a happier term for a disease in which fever with development of pus in various parts and organs are the most salient symptoms.  Sir J. Simpson's appellation of surgical fever, is a generic term embracing within it primary traumatic fever, inflammatory fever, fever such as often accompanies large yet comparatively healthy suppurating wounds, as well as the malignant variety of fever (pyemia or suppurative fever) to the study of which the pages of Dr. Braidwood's work is devoted.

The following definition of pyemia or suppurative fever is most

graphic; it shows the author to have great power of truthful delineation; we may quote it as a sample of his style, which is at once clear, terse, and vigorous, as it is true to nature :—

" Pyemia may be defined to be a fever which, attacking persons of all ages, is generally sequent on wounds, acute inflammation of bone, the puerperal state, surgical operations or other sources of purulent formation, and septic infection. It appears sometimes to prevail in an epidemic form. No one cause has as yet been found to produce this disease. The presence of pus is not necessary for its occurrence.

" The injection of putrid fluids as also of chyme and other healthy fluids, induces in animals symptoms like those of suppurative fever, and pathological appearances in the viscera similar to those met with in the early stages of this disease. The symptoms most pathognomonic of suppurative fever are, a more or less sudden invasion on the 4th or 5th day after an operation, marked generally by rigors or by depression of spirits and great anxiety followed by profuse perspirations; the pulse is generally rapid; the tongue is furred, then loaded, and by and bye, brown and dry; the skin assumes a dusky, sallow, and then a somewhat icteric tinge; there is very great prostration and emaciation, one or more of the joints swell, become red and painful, and may even suppurate; the breath has a heavy sweetish, or purulent odour; and there is laboured respiration, delirium, or other symptoms indicative of other organs being chiefly involved. This fever has no fixed duration, but it exhibits certain stages, and generally abates or becomes intensified on the 7th, 8th, 15th, 21st, 22nd, or 28th days, dating from the first rigor or other initiatory symptom.

" It is characterized by the formation of secondary abscesses in the internal organs (most frequently in the lungs, liver, kidneys, spleen and brain), and also in the joints and cellular tissue.

" I have designated pyemia a fever, because it seems to me that regarding its origin, symptoms, progress, and pathology, this disease is more nearly allied to the class of febrile affections than to any other group of diseases with which we are acquainted. This view is further confirmed by the only treatment which has as yet been followed by success. A liberal and properly regulated use of stimulants, and of nourishing diet has alone been found efficacious in averting that serious issue, which has hitherto compelled surgeons to view a rigor after operation as a death signal."

Dr. Braidwood devotes one long chapter to the narration of cases; these, twenty in number, are given with great accuracy of detail, and will well repay careful perusal by those interested in this important subject. The portion of the work, however, which we have

studied with the most profit and satisfaction, is the chapter relating
to the etiology of the disease. In this chapter the predisposing
causes are first discussed, then the causes which have been supposed
by various authors to be the exciting causes of pyemic fever. As
to its spontaneous or contagious origin, Dr. Braidwood asks is
pyemia or suppurative fever contagious ? That is, is it communi-
cable by media? Such means of propagation are manifold, yet he
thinks there is no proof that they spread the disease.

Patients during labour, remarks Sir J. Y. Simpson, have been
and may be inoculated with a materies morbi capable of exciting
puerperal fever, and which is transferable by the fingers of the
attendant acting like the ivory points of the old vaccinators. To
prove this statement he quotes the interesting fact that, while prior
to 1846 the mortality of puerperal cases in the great hospital at
Vienna was one in ten, subsequently to 1848, it fell to one in
seventy-four. This was owing to the regulation made in 1847, by
Dr. Semelweiss requiring students to abstain from touching parts
at the autopsies, and obliging them to wash their hands in a solution
of chlorine before and after every vaginal examination.

While admitting that this goes far to corroborate the supposition
that puerperal fever is inoculable, and in this sense contagious,
Dr. Braidwood nevertheless concludes that " as far as our knowledge
at present warrants, we can only conclude that suppurative fever is
not contagious. It is," he adds, however, " desirable to isolate cases
of suppurative fever, and to remove them from amongst operation
cases, lest the latter should be exposed to any deleterious influence."

As regards suppurative fever being caused by thrombosis or
mechanical obstruction, we know that this doctrine has been chiefly
elaborated by Professor Virchow. Capillary embolia, according to
his notions, frequently give rise to minute deposits in the kidneys,
spleen, and even the substance of the heart. When a considerable
fragment of a thrombus becomes wedged at a certain point of an
artery, it may in its turn crumble away through the onward pressure
of the blood, and thus the minute particles into which this crumbling
gives rise, are conveyed with the smaller branches into which the
vessel breaks up. Thus alone Virchow appears to think that the
fact can be explained, that in the district supplied by an artery of
considerable size, a number of little deposits of the same sort are
ound. The secondary abscesses show the same fate as the throm-
bus—heal or decay. In opposition to this view Dr. Braidwood
observes that pyemia often exists without any evidence of phlebitis

or thrombosis; still oftener it occurs without any evidence whatever that it has been preceded by either of these or by any other affection of the veins. It has, therefore, in his opinion, not been satisfactorily shown that either phlebitis or thrombosis stands in any special or peculiar manner in relation to pyemia as cause and effect.

Virchow's ingenious theory is further opposed by the fact that uncomplicated embolism as derived from an apoplectic clot, from atheroma or from clots caused by mechanical irritation or phlebitis, is followed by fewer points of congestion and stasis, than is the case in suppurative fever. In the former instance, too, the area of each embolus is wider, and degenerative softening is less liable to follow. Bristowe also points out that this embolic theory does not explain cases " starting from some part of the systemic nervous system in which the lungs escape, while secondary deposits abound in other organs."

It is true that this work contains much which is not original; the opinions and theories of many authors are quoted and criticized; such criticism forms an essential part of the treatise, and it appears to us to be done with much candour and fairness. But there is also good original matter in the volume, and altogether we do not hesitate to pronounce it a monograph of great merit.

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## RECENT WORKS ON DISEASES OF THE SKIN.

1. *A Manual of the Diseases of the Skin.* By BALMANNO SQUIRE, M.B.F.L.S. London: Churchill. 1869. Smaller edition, pp. 204.

2. *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment.* By TILBURY FOX, M.D., Lond. Second edition. London: Renshaw. 1869. 32mo, pp. 472.

3. *On the Parasitic Affections of the Skin.* By DR. M'CALL ANDERSON. Second edition. London: Churchill. 1868. 8vo, pp. 250.

IF the human skin were to profit in proportion to the attention bestowed upon it, as evidenced by the flood of cutaneous literature, we should naturally look for some striking diminution in the number of those affected by skin diseases, or at the least for signal advances in our methods of treatment.

Every year there issue from the press handbooks, manuals, guides for the student and the general practitioner, and practical and theoretical treatises. We are offered information on the real nature and rational treatment of eruptions, are furnished with reports of Skin Dispensaries, while special periodicals, in the English, French, German, and Italian languages, give us the means of becoming acquainted with the views of the leading authorities, and with the general progress of dermatology.

" The skin " is a favourite specialty just at present; and every physician who attends a skin dispensary, or demonstrates in that department at a general hospital, seems to be unwilling that his personal experience should pass unrecorded, and forthwith writes a book.

From the abundance thus presented to us, it is embarrassing to make an individual selection; but since to the earnest student a good handy text-book on this subject is indispensable, we do not think that he will err much in selecting one of those whose titles are given above.

Few will now question the importance of training our future practitioners in the great subdivisions of medical science generally recognized, and in the case before us, even taking the lowest ground, a knowledge of skin diseases is required of the aspirant for a medical diploma by several of the examining bodies, while if we regard the frequency of their occurrence among rich and poor, the often puzzling features in their diagnosis, the determination of the existence or non-existence of contagious qualities, and finally the satisfaction and credit we gain by the successful treatment of a hideous and disgusting family of disease, we cannot too forcibly urge upon the student and the practitioner the imperative necessity of a rational and systematic study of the lesions of the skin.

With this end in view, all general hospitals would do well to set apart a certain time each week for teaching the student to cultivate his faculties of observation and discrimination in the recognition of skin diseases, for the examination of which the out-door department will always afford abundant means.

It is one thing to set up special hospitals, and quite another thing to establish special means at a medico-chirurgical hospital for the study of an important branch of medicine. But since the scattered cases, occurring in the wards of an hospital, are too few to lend much material for instruction, it is only by some such means as that just alluded to that we can aggregate a sufficient number of cases for profitable teaching.

Moreover, the attention necessitated by the accurate observation of the precise differences between the various elementary lesions and of their manifold gradations, will foster that painstaking habit of mind so essential to the well-furnished practitioner, while the eye will be exercised in the study of what may be called the natural history field of the physician, for we do not forget that the skin has a zoology and botany of its own.

Accurate diagnosis is the essential preliminary to a rational line of treatment, and since it is impossible to become familiar with the characters of a protean group of diseases without seeing them frequently contrasted and mutually illustrated, the student who has had the golden opportunity of being thus taught, will start from a higher vantage ground; and, by being able to bring his collective experience, gained while at hospital, to bear at once on the isolated cases occurring in general practice, will be in a position to extend his knowledge on a sound basis, and will feel a certainty of diagnosis otherwise unattainable.

And as the commoner forms of skin diseases may be taken as not more than twelve or fifteen, a comparatively short time devoted to this special study will familiarize him with those forms of eruption which will be sure to meet him soon in practice.

We would advise the student to initiate his studies with a small and not too comprehensive work; and as Mr. Squire's little manual is suitable in these respects, we shall accord it the first notice.

Mr. Squire limits himself to the diseases met with in this country, and omits such affections of the skin, *e.g.*, acute eruptive fevers and cancerous sores, as are described in the general systematic treatises on medicine or surgery.

He lays great stress on diagnosis, without which indeed the skin doctor is powerless; and as it has been by increased knowledge in this respect that our views of treatment have progressed, so it is in this direction that we must chiefly look for still further improvement. In the instructions for treatment, carefully selected local remedies are especially enjoined, coupled with a rational constitutional treatment; and, as a rule, specifics are discarded, and their empirical use discountenanced. But we cannot consent to the author's verdict on arsenic—that its reputation has fallen into decline, and that " on some few eruptions it slowly exercises, though often at the expense of much discomfort to the patient, a beneficial influence."

On the contrary, we believe that no other remedy will supply

the place of arsenic, when prescribed with due care, but that at present we must content ourselves with its empirical administration, more especially in the *relapsing* skin diseases, as pointed out by Mr. Hutchinson.

In this latter view we recognize the connexion which possibly may exist between the influence of arsenic on the skin and its admitted anti-periodic action.

Sarsaparilla is summarily dismissed as a remedy for constitutional syphilis, with the statement that "it is quite inert;" however, in this opinion many physicians of the present day will perhaps concur.

In some of the important diseases—for instance, eczema—the treatment is not satisfactory, and a crude list of remedies is given without any directions as to their respective uses. What can we learn from a wearisome list of sixteen local applications, including everything from huile de cade to vermilion ointment, while we are simply told that these "are the most important topical remedies?"

Surely, in a disease the most common, the most multiform, and often the most obstinate, we require some more definite information than a selection of names from a list of materia medica.

We were surprised to find that the author makes no allusion to the value of flexible collodion as a protecting agent in herpes zoster. In the numerous cases which occurred last summer and autumn, we found the greatest advantage to result from the immediate painting the vesicated patches with the collodion, and repeating the same as often as required. It is the cleanest and most effectual means of preventing the rupture of the vesicles, and we can warmly recommend it even in cases where superficial ulceration has taken place.

The classification adopted is essentially that of Willan, though, in common with most writers, the syphilides, the sebaceous diseases, and the animal and vegetable parasite diseases of the skin are separately treated.

The numberless and often useless specific names are very properly subordinated to the general characters of each disease; and a useful feature in the book consists in the giving at the beginning of every chapter a definition or summary of the chief characteristic points of the genera included under each class.

A favourite view of the author's is the purely pedicular origin of prurigo senilis; but, as it is not universally accepted, we will let the autnor speak for himself:—

" On stripping a person affected with prurigo senilis, it would not occur to any one who was unaware of the fact, that the disease was produced by a pediculus. The pediculi are rarely numerous enough to arrest the eye; and more than this, even a careful scrutiny of the skin, including in the survey the parts of it that are most affected with eruption, will, in the majority of cases, fail to detect the presence of a parasite; not even a *nit* is to be seen on any part of the skin, or on any of the hairs growing from it. Now the pediculus capitis and the pediculis pubis, in cases where the insect itself is not easily to be found, may always be readily detected by means of the nits attached to the hair of the part they inhabit. It is not to be wondered at then, that the part played by the pediculus corporis should have been so often overlooked.

" The parasite lives, not on the skin, but on the underclothing.[a] It is on the inner surface of the undermost article of clothing, whatever it may be, that the parasite is to be sought for, and here it is not always very easy of discovery. As already stated, the pediculi are rarely to be found in numbers; a very few of them are capable of causing very severe irritation. A careful investigation of the patient's shirt may lead to no result, and yet his disease be due solely to the pediculus. The parasite nestles in the " *gathers* " or " *folds* " of the shirt. These are most numerous in a man's shirt, at below the back of the collar of the shirt; and hence it is, that in men the disease is usually most severe on the back of the shoulders, and always more severe on the shoulders than on the chest. In women (whose under garments are arranged differently) the eruption is commonly as severe on the breast as it is on the back of the shoulders. At and below the waist, where the shirt is again thrown into folds, the pediculus again establishes himself, and, accordingly, the loins and upper part of the thighs are also common situations of the disease."

The chapter on the syphilides is good, and the diagnosis carefully given. A decided mercurialist—he prefers the green iodide of mercury, both in the second and third stages; and he thinks that iodide of potassium is chiefly of value as an adjunct to and not as a substitute for mercury, even in the advanced periods.

Thirteen woodcuts—some of them engraved from micro-photographs by the author, and all of which are devoted to the parasitic diseases—illustrate the book, which is a handy and useful companion.

Dr. Fox, in the new edition of his Manual, aims at providing the practitioner, and especially the student, with a concise and

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[a] " It is, of course, not to be understood from this that it does not *feed* on the skin. It lives upon the blood just as the flea does."

practical account of diseases of the skin for general use, combining the pith of his two former works. The exotic diseases of the skin are included for the benefit of those about to enter on foreign service. A glossarial index is given, and a formulary of nearly 200 selected prescriptions is furnished, the only objection to which is that " to each formula is appended the name of the disease in which it is useful "—a notion that savours of rule-of-thumb practice.

The classification adopted is on a pathological basis, and is founded on the plan proposed by the College of Physicians in their new nomenclature report.

A considerable number of woodcuts, illustrate the parasitic diseases especially. We regret more trouble was not taken in bringing out the book, as the binding is by no means substantial enough for a manual. The first few chapters comprise a compact and useful summary of the general pathology, etiology, and diagnosis which is well adapted to the students' wants, and, indeed, the book bears evident marks of being specially intended to furnish that class of readers with the necessary fund of information. For example, when stating his own view as to the mixed nature of the so-called strophulus, he adds, " However, at examinations candidates are required to say that strophulus is the lichen of infants and young children."

The diagnosis in many cases is almost too elaborately given, and some of the difficulties raised are, we fancy, more to show the author's ingenuity than likely to be of service to the student. Under the " Diagnosis of Eczema," seventeen or eighteen affections are enumerated, with which it might possibly be confounded, and the minutiæ of distinction are gone into with great detail. Taking Chapter VIII. on catarrhal inflammation or eczema—that cutaneous puzzle—as a fair test of the entire work, on the whole it will be found highly satisfactory; and, we think, that if the salient points of eczema were collectively stated, it would have saved much needless repetition in the after diagnosis. If we rightly apprehend the author's meaning, the following will stand as the real characteristics of eczema. Briefly defined as a " catarrhal inflammation of the skin, modified by the constitution of the patient," the essential diagnostic of the eruption is the tendency to free secretion, to the outpouring of a large quantity of fluid from the skin; the discharge has the peculiar property of stiffening linen, and dries into thin yellow crusts. However long standing any case of eczema may be, it will always furnish sufficient evidence in its history of the fact of

its being a *moist* disease, and the application of irritants will commonly evoke discharge—*i. e.*, there is a capacity for discharge always present that is absent in other similar diseases.

Speaking of the multitude of adjectives, many of them pentesyllabic, which have been affixed to the generic term eczema, he sensibly adds, and we cordially agree with him, "But really to dignify all these secondary changes by an elevation to the position and rights of special varieties is to me highly objectionable."

If ever the study of skin diseases is to become a part of the ordinary curriculum of medical education, it must be disencumbered of the jargon of pedantic terms with which some writers disfigure their descriptions. Thus, one of the leading British dermatologists, in treating of this malady, groups under different heads no fewer than twenty-one forms or varieties, the list of adjectives ending in "um" being enough to deter the most zealous from attempting to master them. Fortunately no one else is likely to make much use of them.

There is a form of cutaneous disease, common among the poor, and which it is highly important, with reference to treatment, to diagnose from its counterfeits.

Dr. Fox has described this eruption carefully under the name Impetigo contagiosa, and we will let our readers judge of its characters for themselves:—

"I am anxious again to direct attention to the *clinical* features of a common form of cutaneous disease, seen especially in dispensary and hospital practice, and universally classed by practitioners with eczema impetiginodes or impetigo simplex, but which is, as regards nature and treatment, a wholly distinct affection. Its cure is usually certain and easy by local means. It is classed under the term porrigo, as used by some writers, and is one of the many varieties of eruption which together constitute the composite "scald-head." I have hitherto called the disease contagious impetigo; for it is essentially inoculable (contagious). It is often *quasi*-epidemic; it differs in severity and in features at different times, tends to run a definite course, exhibits a uniformity of character as regards the eruptive condition, and is vesico-pustular in type. Mr. Wilson has recently stated that the disease is a distinct and common one. I had the pleasure of showing Dr. M'Call Anderson some cases a few weeks since, and he acquiesced in the special nature of the disease. Dr. Clifford Allbutt has informed me that he is now satisfied as to the existence of the affection as I have described it.

" *Clinical history.*—The disease is seen amongst children of the lower orders especially, probably in great measure because the opportunities for

contagion are more numerous, but occurs also in those who have all the advantages of social position and good hygiene. It is ushered in occasionally by smart, generally by slight, fever; or the child looks ill, pale, languid, and is said to have been 'in a burning heat,' or to have had ' cold chills.'

" There is clearly an affection of the system at large before the occurrence of any eruption, which in the majority of cases appears first of all on the face, or top or back of the head, in the form of ' little watery heads' (vesicles), that enlarge into flat bullæ. Sometimes the hands are attacked at the outset, and look as if burnt here and there; phlyctenæ may also arise out of and around the remnants of vaccinia, or about cuts or bruises. The disease then extends to other parts, the back of the neck, buttocks, feet, &c. The vesicles are always isolated. In five or six days the bulla may reach the size of a sixpence or shilling, unless ruptured, and then it is flat and depressed in the centre, the contents becoming turbid. The secretion consists of lymph-like fluid, granular cells, and subsequently pus cells.

" Scabs commence to form a few days after the appearance of the disease. They are characteristic of the disease, varying in size from that of a split pea to a shilling; they are flat, straw-coloured, dry, and granular-looking, and appear as if ' stuck on' to the part; they present, as a rule, no inflammatory areola around their circumferences, though this is the case in severer instances of the disease. If removed, little sores are observed beneath, more or less filled in by gummy-like secretion, or a little pellet of aplastic lymph. The disease may be spread from spot to spot by direct inoculation with this secretion in the act of scratching. The crop of vesicles is to some extent successive, though the majority of the places ' come out' in the first week or so. In some instances the disease resembles vaccinia very closely. There is always a uniformity about it; it always commences by vesicles; there are no papules present at the height of the disease. On the face the spots may be confluent, and then the disease resembles eczema impetiginodes; but the patches are made up of the elements described above. On the head the disease consists of circular, mostly isolated, flat-scabbed spots about the top and back of the head, the hair being matted by the crusts. There are usually no pediculi and no offensive smell.

" The mucous membranes of the eye and the nose are often implicated; then inflammation is produced by the development of little ulcers, that take their origin in the development apparently of vesico-pustules, identical with those seen on the surface of the skin. The eye may look as though affected by slight purulent ophthalmia, but soon recovers itself. All the children in a house may be attacked at one time, or consecutively, by the disease, and in such a way as to impress upon friends and attendants the idea of its being contagious, and under these circumstances it

may be regarded as scabies. *It may complicate eczema, scabies, and other affections, and vice versâ.*

"*Diagnostic features.*—Its apparently epidemic character in many cases; its attacking children; the antecedent febrile condition; the origin from isolated vesicles, which tend to enlarge into blebs, and to become pustular, the bleb having a depressed centre, and it may be, a well-defined, slightly raised, rounded edge; the *isolation* of the spots, the *uniform* character of the eruption, and its general and scattered condition; its seat, and frequent commencement about the face or head; the circular, flat, granular, yellow crusts; its contagious nature and inoculability; its frequently following in the wake of vaccination; the implication of the mucous membrane of the eye; the absence of pain, and especially troublesome itching at night.

"It may be confounded with *eczema;* but the history is altogether different, and the isolation, the small scabbed patch, the characters of the crusts, and the facility of cure, at once distinguish it. *Impetigo sparsa* does not arise from a vesiculation, but is primarily pustular, made up of aggregated pustules; it is not phlyctenoid; it it not contagious nor inoculable; it does not run a definite course; it is not confined to the young; it is not so amenable to treatment. *Pemphigus;* but here the blebs are more persistent, oval, and distended; the contents are watery and acid; it is non-contagious; it does not occur especially on the face or the head; it is less inflammatory, and wants the characteristic scabs. *Ecthyma:* This is primarily a pustular disease, seen also in adults; there is more induration and swelling: a good deal of pain; it is non-contagious; the scabs are heaped up and dark. *Pustular scabies:* This is the disease with which it is mostly confounded. It must be remembered that the two diseases may co-exist. Both *in children* attack the buttocks especially; both may exist about the hands and feet; but the distinctions are really very clear. In scabies there is no febrile condition; the eruption is *multiform.* If there be ecthymatous pustules, like impetigo contagiosa, they are covered by dark thick crusts; there are plenty of characteristic vesicles, with cuniculi, and papules. If the impetigo contagiosa begins about the buttocks, it appears presently on the face or the head, or both. There is not the irritation of scabies, so bad at night, nor the effects of scratchings about the body; the bullous origin of the disease is distinct, and the peculiar scabs are characteristic. The hands are not specially affected in scabies in the child, but even impetigo contagiosa may attack the hands and feet markedly; still there is no *multiform* eruption. Inoculation will settle the point in twenty-four hours, if we cannot find an acarus. We must not be misled into the idea that scabies exist because several children in the same house have a certain disease, and have apparently caught it the one from the other—a rule adopted by very many. Lastly, the two diseases may occur together.

" When a correct diagnosis is made, the treatment is easy. *The natural course of the disease is a short and definite one.* The disease sometimes occurs in badly-hygiened subjects, and, therefore, tonics may be given. The secretion is a most active element (per inoculation self-practised by the patient) in transmitting the disease to different parts of the same subject or to others ; and this ensures perpetuation and chronocity. And, therefore, we should destroy the secretion, and then alter the behaviour of the surface that yields it. Astringents and antiseptics avail ; but the best is a little ammonio-chloride of mercury ointment— five grains to the ounce. The scabs should be removed, and the ointment applied to the secreting surface. The disease is supposed to be due to the contact of those attacked with non-specific unhealthy pus ; but there are many reasons against this, which cannot be noticed here. It is a very definite disease, dependent upon a particular poison, easy to treat, but little known."

This troublesome affection is well figured in Plate XX. of the New Sydenham Society's Atlas, under the name porrigo contagiosa, and described in the accompanying catalogue by Mr. Hutchinson, who, however, states that it is usually associated with pediculi—an association certainly seen in Dublin.

We were tempted to quote one or two other passages also ; for example, the description of a curious variety of parasitic sycosis, but will content ourselves with recommending Dr. Fox's condensed little Manual as a safe guide to all who are engaged in the investigation of skin diseases.

The class of skin diseases to which Dr. Anderson devotes his elegantly got up and finely illustrated monograph is a peculiarly satisfactory one to treat of, seeing that we know more of the nature and causes of parasitic diseases than of any other cutaneous group, and consequently are in a better position to direct our curative means.

In order fairly to meet the increased attention now paid to the production of disease by external agencies, the present edition of this work has been extended, and the number of illustrations added to, which, as a rule, possess the merit of being original.

The classification naturally divides itself into the vegetable and animal parasitic diseases, and the dermatophytic affections enumerated are :—

1. Tinea favosa (honeycomb ringworm) Parasite ; Achorion Schönleinii.

2. Tinea tricophytina (ringworm).
> *Varieties.* T. tonsurans (ringworm of the head); T. circi-
> nata (ringworm of the body); T. sycosis (ringworm of the
> beard); Parasite; Tricophyton.

3. Tinea versicolor (chloasma). Parasite; Microsporon furfur.

4 Tinea (?) decalvans (alopecia areata). Parasite; Microsporon
Audouini?

The dermatozoic affections are ranged under—

1. Phtheiriasis. Parasite, pediculus.
> *Varieties.* P. corporis (prurigo pedicularis) Parasite, Pedi-
> culus corporis; P. capitis—Parasite, Pediculus capitis; P.
> pubis—Parasite, Pediculus pubis.

2. Scabies—Parasite, Acarus scabiei.

3. Morsus pulicis, cimicis, &c. (flea and bug bites, &c.)

Dr. Anderson holds that ringworm of the head, ringworm of the
body, and ringworm of the beard (sycosis), are mere varieties of one
and the same disease, and in opposition to Hebra, Hutchinson, and
other authorities, follows the French school in their belief as to
the truly parasitic nature of sycosis. The frontispiece represents
an elaborate and beautiful plate of one of the hairs invaded by the
fungus.

One of his favourite points, where he is again confirmed by con-
tinental teaching, is the non-identity which he believes will be
found between the achorion Schönleinii, the tricophyton, and the
microsporon furfur, the parasites met with in tinea favosa, t. tryco-
phytina, and t. versicolor respectively; and the following is a
summary of the proofs against their identity:—

" (1.) In all cases of successful inoculation with the *achorion, tr̄ico-
phyton,* and *microsporon furfur,* the same parasitic disease has been
produced as that from which the parasite was taken.

" (2.) Of the innumerable cases *occurring the human subject* illustrative
of the contagious nature of tinea favosa, tonsurans, and versicolor, which
have been recorded, there is no authentic case (if we except Hutchinson's,
above referred to) in which one of these diseases gave rise to one of the
others.

" (3.) The difference in the appearance of the eruptions, when fully
developed, is so very striking as to lead to the belief that they are
produced by separate parasites.

" (4.) There is no authentic instance on record of the transition of one
of these diseases into one of the others.

" (5.) The difference in the appearance of the achorion, tricophyton,

and microsporon furfur is sufficiently striking to enable the observer in many cases to form a correct diagnosis from the microscopic examination alone.

"(6.) Of the numerous instances on record of the transmission of tinea favosa and tinea tricophytina *from the lower animals* by contagion or inoculation, favus has always given rise to favus, and tinea tricophytina to tinea tricophytina."

In the treatment of favus, sycosis, and ringworm of the head, he strenuously upholds epilation; and among the numerous parasiticides recommended for scabies, though he admits the value of sulphur, he prefers, to any other, styrax, on account of its aromatic odour, destructive effects on the acari, and its non-irritating qualities. It may be used as an ointment—℞ styracis liquidi ℥i., adipis ℥ii., melt and strain; or as a liniment—℞ styracis liquidi ℥i., sp. rectificati ℥ii., olei olivæ ℥i., mix.

To all who are particularly interested in the subjects it treats of, Dr. Anderson's work will be indispensable; and we hope soon to congratulate him on a third edition.

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*Researches on the Nature and Treatment of Diabetes.* By F. W. PAVY, M.D., F.R.S.; Fellow of the Royal College of Physicians; Senior Assistant-Physician to, and Lecturer on Physiology at, Guy's Hospital. Second edition, revised and enlarged. 1869. London: Churchill and Sons.

THE subject of diabetes mellitus, in any of the varied aspects under which it may be studied, whether physiological, pathological, or with respect to treatment, is one so fraught with the deepest interest to the physician, that any matter which can throw light upon the many dark phases of the disease, is sure to be received with welcome.

The author of the book before us is already familiar to every physiologist and practical man, as well by his original researches on the subject of glycogenesis, as his observations on the pathology and treatment of the disease under consideration. We therefore feel confident the favourable reception given to the former edition of his book will not be withheld by the profession from this.

Dr. Pavy may with truth be considered as the best and most recent authority on diabetes, entering, as he does, almost exhaustively into all the particulars of the subject, and being thoroughly

acquainted with the latest experiments at home and abroad. What above all else, in our opinion, entitles this second edition to the attention of the profession is, that, in addition to its being remodelled, and in a great part rewritten, it contains the experience of other physiologists on the vexed question of glycogenesis, as well as the more matured, and, we are glad to say, confirmed views of the author on that subject.

The book is divided into two parts: in the first are considered the chemical detection and quantitative determination of sugar in the urine, and its physiological relations in the animal economy. The second part deals with the pathology, etiology, symptomatology, and treatment of diabetes.

Although, no doubt, most are acquainted and familiar with the question of glycogenesis, it may not be out of place to mention a few of the leading facts discovered and proved by Dr. Pavy on this most interesting subject.

That there is amyloid matter in the liver of man, as the natural secretion of its cells, is a point upon which we believe all physiologists are agreed. It is a body belonging to the carbo-hydrate group. Bernard gives as its formula $C_{12}H_{12}O_{12}$ from the analysis of E. Pelouze; but Professor Apjohn of this city, so well known for the accuracy of his chemical analysis, has given its formula $C_{12}H_{10}O_{10}$, which is that representing the constitution of starch and dextrine.

The great question at issue, however, is not the existence of sugar in the liver when examined *post mortem*, but whether sugar is produced by the liver, and poured into the circulation as a natural phenomenon of life; that is, in other words, whether the glycogenic theory of Cl. Bernard be correct or not. While the author does not deny the existence of sugar in the liver and the blood, under certain conditions, as, for example, an excess of a saccharine dietary, and in certain diseased states, he considers that there is, normally, no sugar, beyond a trace, circulating in the hepatic veins or right side of the heart, and that there is no sugar, normally and during life, in the liver.

Dr. Pavy repeated the experiments of Bernard, upon which he had based his theory, and found that the presence of sugar in the liver and the blood of the right side of the heart, was easily shown to exist, when the experiments were performed as Bernard performed them, but that the same or similar experiments, when performed with more care and attention, were followed by negative results.

In fact, Bernard's conclusions were drawn from *post mortem* changes, and were, therefore, faulty as indicative of the real state of the liver during life.

The subject is considered, first, with regard to the blood, and, secondly, the liver. As these experiments have been long before the profession, we shall here only give the results Dr. Pavy has arrived at, in his own words:—

" In three successive experiments upon dogs, I carefully compared the blood from the right side of the heart with that collected from the portal vein. The specimens were treated as closely alike as it was possible to do ; and, when tested with the cupro-potassic solution, the portal blood yielded the same slight reaction that was given by that derived from the heart. It was impossible, in fact, by means of the reagent, to recognize any appreciable difference in either of the experiments between the two. Now, one of the principal arguments upon which the glycogenic theory has been founded is, that a striking difference exists in the blood that has escaped from the liver, as compared with that which is flowing to it—the one, it was said, being highly charged with, the other free from sugar. It seems, however, that no such difference, taking the blood in the condition belonging to life, in reality can be traced.

" As far, then, as we learn from what has preceded, there is not, as a natural process of life, that flow of sugar into the circulation from the liver, for the purpose of destruction in the lungs, which the former mode of experimenting led physiologists to believe existed. After death, and under certain unnatural states during life, it is true there is a large escape of sugar from the liver ; but, as a normal condition, there is only trace of sugar to be encountered in the blood between the liver and the lungs,—the same, in fact, that is also to be met with on the other side of the lungs ; in the blood returning from the system at large ; and even in the blood that is flowing towards the liver. The blood, therefore (viz., that escaping from the liver), which was formerly looked upon as affording the evidence upon which the glycogenic theory was founded, has nothing special belonging to it. As nearly as possible the same behaviour, as far as I can discover by the closest examination, is presented, no matter from what part of the circulatory system the specimen of blood may have been derived."

Again, when discussing the question of the liver itself, he says:—

" Taking a review of the results that have as yet been brought forward, the position of the matter may be said to stand thus : the evidence upon which the liver was supposed to enjoy a sugar-forming function was

based upon conditions met with after death. Now, it happens to turn out that these conditions can be shown to differ from those existing during life; and hence we are no longer justified in using them for the purpose they have hitherto been applied to, viz., as a foundation for conclusions regarding the physiological state. It is not that there is anything incorrect about Bernard's experimental results, as far as the results themselves are concerned, but what I have to speak against is that inferences have been drawn from them which they do not, strictly speaking, warrant. The results I have been describing as having been obtained by myself are perfectly compatible, not with our former conclusions, it is true, but with the experiments from which those conclusions were drawn. From an ordinary examination of the liver, and of the blood of the right side of the heart after death, we obtain reactions indicative of the presence of a large quantity of sugar, and the deduction hitherto drawn has been that the sugar existed there as a natural condition of life. Such a deduction, however, is obviously gratuitous. All that can be strictly or logically inferred from such an examination is that the liver and right-ventricular blood are in a saccharine condition *after death.* To obtain evidence of the state that exists *during life* requires a different mode of experimenting, and from such it appears that error has arisen through overstepping the strict letter of interpretation that the original experiments will bear."

The author then gives the experience of others confirmatory of his opinions, particularly referring to that of Dr. M'Donnell of this city, in his " Observations on the Functions of the Liver, Dublin, 1865," and that of MM. Schiff, Meissner, and Jaeger, published in the " Journal de l'Anatomie et de la Physiologie. Paris, 1866." Dr. M'Donnell's experiments gave results closely agreeing with those of Dr. Pavy, and the method he adopted of gradually freezing the animal, whose liver was about being experimented on, so that the liver as well as the rest of the animal was frozen, showed results still more corroborative of Dr. Pavy's views. MM. Meissner and Herzen experimented on living animals, and by plunging a portion of the liver into boiling water, so as to prevent any *post mortem* change taking place, they failed to detect any sugar in the part so operated on. The conclusion at which all these gentlemen have arrived is, that the amyloid substance is not transformed during life into sugar under physiological circumstances. A difficulty then naturally arose to account for its use in the animal economy, when Bernard's theory—that being converted into sugar it was used up and spent in combustion in the lungs—was undermined and discarded.

Dr. M'Donnell believes that, becoming united with nitrogen in the liver, it leaves it as a proteic compound, and may form one of the important constituents of the blood. Dr. Pavy, on the other hand, considers it aids the formation of fat:—

"In the first place, it may be said that it has been ascertained beyond dispute that starch and sugar, introduced with the food, lead, in the animal system, to the production of fat. Now, it has been shown by what has preceded, that, from the ingestion of these principles, a striking increase is occasioned in the amount of amyloid substance contained in the liver. There can be no question, indeed, from the results that have been mentioned, that starch and sugar pass into amyloid substance in the liver. The production of amyloid substance, therefore, may be taken as representing the first step of assimilation of the starchy and saccharine elements of our food, and, as these elements are known to proceed on into fat, we have grounds for the surmise that amyloid substance simply occupies an intermediate position between the two. The process of assimilation may go on to the production of fat in the liver, or, it may be, that it stops short at the formation of another principle which escapes from the liver and is elsewhere transformed into fat."

Dr. Pavy, without accepting Bernard's theory of glycogenesis, thinks that there is sufficient evidence to prove that the liver is the seat of error in diabetes, a faulty action giving rise to the sugar encountered in the complaint.

This error of function Dr. Pavy considers due more to an altered condition of the blood circulating in the liver than to any nervous influence on its vessels. Various experiments upon the sympathetic and pneumogastric nerves, made by him, fail to prove that this sugar change is directly due to them or under their control.

The difficulties in the way to a clear elucidation of this all-important point are still many and great, not the least being that morbid anatomy has contributed nothing to it.

No constant structural change of the liver is to be discovered with which to connect diabetes. "We have," Dr. Pavy says, "a manifestation of a disordered functional action to deal with, without any discernible anatomical alteration to account for it."

Want of space prevents us making further comments upon this most interesting topic; we shall, therefore—without doing more than recommending the portion allotted to the consideration of the pathology, as peculiarly well written and enlarged—pass on to notice the last, but by no means the least, interesting and practically

useful part of the work, namely, that dealing with the subject of treatment.

This is considered under the heads of diet and medicine. Among the latter, alkalies were at one time much looked to for good results, on this point our author's opinion is, that alkalies, to do any good, must be given in moderate doses, and continued for a considerable time, and even then it is not every case that is benefitted by their use. We find on reference, that Dr. Roberts considers their administration has no influence whatever on the secretion of sugar. Clinical experience, therefore, does not confirm the opinion of Miahle as to the merit of this line of treatment. In passing, we may mention that Dr. Pavy seems not to be aware that the above mentioned author, Dr. Roberts, had no difficulty in producing an alkaline state of the urine of diabetics, under the use of alkalies, since, in this edition (without any allusion to the opposite opinion of others), we find the statement again made, that a striking and peculiar circumstance specially belongs to diabetes:—That, notwithstanding the administration of alkalies (to the enormous extent of four ounces a day in one case) the urine does not acquire an alkaline character.

While Dr. Pavy was preparing his book for publication, the treatment of diabetes on the oxidation theory, by the peroxide of hydrogen, was attracting a considerable amount of attention. His opinion is, that it is perfectly devoid of power to influence the disease. This view we find corroborated, and more forcibly stated in a paper by the author, in the *The Lancet* of March, 1869. In this paper, in addition to his own experience, he gives Dr. Richardson's opinion of its merits. Dr. Richardson was one of the most prominent of its advocates at first, but he now says, " that he is obliged with regret to state that, at this moment, there is no proof that the peroxide of hydrogen is of specific value in the treatment of diabetes."

These opinions necessarily carry with them much weight, yet, whether the results be confirmatory of Dr. Pavy's opinion or not, it is to be hoped that those, under whose care cases may occur, should be most accurate and careful in their daily investigations of the progress of the disease under this new treatment, for by no other means will statistics be of any value in deciding this point. We lay stress on this, for since Dr. Pavy's book, and even since his paper was pubblished in last month's *Lancet*, we find cases recorded in the journals giving other and conflicting results.

The drug to which the author attributes the greatest success is opium. It may be given with benefit in large doses. Almost incredible quantities have been taken, in the case of a woman mentioned by Dr. Pavy, nine grains daily were reached. The case is given very shortly in his book; but since its publication, the full accounts have been detailed in one of the journals. The patient was a favourable one for experiment, as she was about sixty. The sugar disappeared when nine grains were reached, and she has since left the hospital to all appearances well. It is worthy of note, that in this case no restriction as to diet seemed to have been made.

We greatly regret that Dr. Pavy did not think it worth appending a greater number of cases similarly treated, as one case of treatment by large doses of opium is hardly sufficient to be a precedent for future guidance in similar cases; and in such an exhaustive treatise on diabetes as Dr. Pavy's book manifestly is, many more cases, either with or without restriction as to diet, might, we think, have been detailed with benefit.

The chief treatment is not, however, in administering medicines, but placing the patient in the most perfect hygienic conditions, as MM. Bouchardat and Trousseau have lately laid such stress upon, and restricting the diet to an almost complete exclusion of saccharine or starchy food. Too much care and perseverance cannot be expended in following out this line of treatment, as the infraction of it, even in the case of a single meal, may be followed by a return of the sugar in the urine, and the distressing symptoms consequent on it, not only immediately, but for several days succeeding the indiscretion.

The effect of a varied diet on the diabetic, in increasing or diminishing the amount of sugar passed, is well demonstrated in the case which Dr. Pavy has appended. He has admirably depicted the daily changes in the elimination of sugar by a plan, in which, at a glance, the rise and fall in the amount of sugar is seen to correspond accurately to the use of saccharine food, or its withdrawal.

While commending this book to the careful attention of every member of the profession, and congratulating the author on its production, we venture to suggest to Dr. Pavy to append an index and table of contents in his next edition, as their omission necessarily takes much from its utility as a standard work of reference.

1.—*Supplement to Dr. R. E. Scoresby-Jackson's Note Book of Materia Medica, containing the Alterations and new Preparations introduced into the British Pharmacopœia of* 1867. By ANGUS MACDONALD, M.A., M.D., Lecturer on Materia Medica and Therapeutics at Surgeons' Hall. Edinburgh: Maclachlan and Stewart. Pp. 46.

2.—*Summary of Remedies with their Composition, Doses, and Uses.* By JOHN EVANS, M.D., Apothecary and Chemist, 49, Dawson-street, Dublin. Manchester: J. F. Wilkinson. 32mo, pp. 63.

IN November, 1866, we drew attention to the useful work of Dr. Scoresby-Jackson. In the supplement by Dr. Macdonald, the arrangement of Dr. Scoresby-Jackson's note book is adopted, and to those who use it the Supplement is indispensable, as it contains a full account of the various changes and additions made in the last Pharmacopœia.

Explain it as we may, the fact is undoubted that several of the physicians who in this city and in London, enjoy the largest and most lucrative practices, use very extensively drugs which have never found their way into the official list. Dr. Evans, a scientific and experienced pharmaceutist, has, as is well known, for many years been most careful to procure, from reliable sources, not only the officinal preparations, but all new American and continental remedies, as soon as their powers were recognized; and we feel indebted to him for the publication of this little work, in which, arranged alphabetically, will be found the most important remedies in use in the United Kingdom, France, and America, excepting the pharmacopœian preparations, their composition, dose, and chief therapeutic virtue. To show the need of such a work, we need only mention that a few months ago a gentleman presented to us the prescription of an eminent Edinburgh physician, from which he had derived considerable benefit, we were obliged to confess that even with the name of the most prominent drug in it we were not familiar, and he then informed us that a London physician, one of the best known names in the profession, had been equally ignorant. Such being the case we were exceedingly glad to see the handy little book now before us.

# PART III.

## QUARTERLY REPORTS.

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### REPORT ON PRACTICAL MEDICINE.

By JAMES CUMMING, A.M.; M.D.; Professor of the Theory and Practice of Medicine, in the Queen's College, Belfast; Physician to the Belfast General Hospital; President of the Ulster Medical Society.

#### THE PATHOLOGY OF FATTY DEGENERATION.

FROM Dr. Ormerod, already well known by his observations on this subject, we have an elaborate paper on fatty degeneration. Dr. Ormerod denies that fat is produced except in living bodies, and rejects altogether the usually accepted theory regarding the adipocerous transformation. Adipocere he believes to be a substance composed of fatty acids, derived from the fat which existed in the body which has been subjected to the change, in combination with an alkaline or earthy base—ammonia or lime, for example—derived from the water with which the animal substance has been treated. The whole of these fatty acids are supplied by the pre-existing fat, and no fat whatever is formed during the change. Indeed a number of experiments showed that there was actually a less amount of fat in substances which had undergone the adipocerous transformation than there had been before these substances had been submitted to the process.

In the living body fatty degeneration is invariably preceded by other changes in the structures which ultimately become fatty. In striated muscle the first change which occurs is disintigration of the sarcous elements—a cleavage, either longitudinal or transverse, having taken place in them giving rise in the former case to the appearance of filaments, in the latter to that of discs. The appearance of the fatty change is subsequent to this, and depends on the existence of fatty matter in the blood.

Examinations of the process as occurring in the heart, liver, kidney, and placenta, have led Dr. Ormerod to the conclusion, that in all cases the fatty change is preceded by degeneration. This degeneration is the important element, the fatty infiltration being a consequence and not a cause of it. The source of the fat is the blood circulating in the part.—*Bartholomew's Hospital Reports*, Vol. iv., p. 30.

## TREATMENT OF TYPHOID FEVER.

The external application of cold water, in cases of typhoid fever, has been of recent years extensively employed with remarkable results. The object of this method of treatment is to combat the excessive heat, which is an essential characteristic of all fevers. The thermometer accordingly becomes indispensable for the purpose of furnishing exact information regarding the amount of elevation of temperature which has been attained by the patient. "*Sine thermometro nulla therapeia*," has been adopted as a motto by Jürgensen, one of the principal advocates of the method referred to. The temperature may be taken by inserting the thermometer into the axilla, or, what is better, into the rectum, and should be ascertained every two or three hours. Jürgensen's rule is that whenever the temperature, whether by day or by night, reaches 104° F. (40° C.), cold water should be applied.

This is done either by cold baths, cold affusions, or by wet packings. Of these the first is by much the most efficacious and manageable. The advantages claimed for this mode of treatment, when it is employed systematically, and from an early period in the disease, are, that the frequency of the pulse is diminished; that the entire affection is less severe, the evacuations less frequent; that tympanitis, hemorrhage, and perforation occur very rarely; that pulmonary affections are less frequently met with, and, it is said, that when they do occur they do not contra-indicate the employment of the cold applications; and that the duration of the disease is diminished.

Under this treatment, Jürgensen reports a mortality of 6 in 250 cases; and results of the most satisfactory nature have been recorded by other observers. The employment of the cold water applications is believed to be quite compatible with the administration of remedies of various kinds to fulfil other indications, or to assist in the anti-pyretic action.

Professor Liebermeister, of Bâle, has published a detailed

analysis of a large number of cases of typhoid fever treated in that city, which possesses considerable interest.

From the summer of 1845, Bâle suffered from a severe epidemic of typhoid fever. Liebermeister records the results of the treatment of 1,178 cases of the disease in the hospital of the city, between August 22nd, 1865, and December 31st, 1867. Of these, 163 died, so that the mortality was at the rate of 13·8 per cent. During the previous five years the mortality in the same hospital was 25·7 per cent. The rate of mortality in the London Fever Hospital, during a period of 14½ years, is given by Murchison as 18·56 per cent. in this disease. In all Liebermeister's cases, cold water was applied externally. In one group of 839 cases, it was only applied, as a rule, once daily. Of this group 130, or 15·5 per cent., died. Having become convinced of the value of the cold water treatment it was more freely employed from September, 1866. The group of cases thus treated numbered 339, with a mortality of 33, or 9·7 per cent. To the obvious objection, that this diminution in mortality may have been the result of a favourable change in the severity of the disease, and that the favourable result may have really depended on the cases becoming milder, Liebermeister replies by showing that during the preceding five years the mortality fluctuated within very narrow limits, there not having been a variation of more than 2 per cent., and that the hygienic condition of the patients, from overcrowding, was unusually bad.

In this group of 339 cases a cold bath was given to every patient as often as his temperature, whether by day or night, reached 102°·2 F. (39° C.). The temperature was taken every two hours, and it frequently happened that a patient had a bath after each examination, or twelve baths in twenty-four hours. In some instances, above 200 baths were given to a single patient during the progress of the disease. To a tolerably strong patient, the bath is given for ten or fifteen minutes at 68° F. If it is not well borne, the time should be limited to five minutes. Cold affusions were occasionally employed, but were found to be troublesome and unpleasant to the patient, besides being less effectual in reducing the temperature. Wet packing was used with debilitated patients. Four successive packings, of a duration of from ten to twenty minutes each, are believed to be equivalent to a bath at from 68° to 70°, taken for ten minutes.

Of internal remedies calomel and iodine were pretty extensively

employed. Calomel was given in ten grain doses. In some cases only one dose, in others several doses were given. The first dose usually purged, but this effect was not produced by the succeeding doses. Usually a marked remission of the fever was observed after the purgative action of the first dose. Salivation, when it occurred, was slight, and not troublesome.

The following formula was used for the administration of iodine:—

> Iodine, gr. vi.
> Iodide of potassium, gr. xii.
> Distilled water, a drachm.

Of this, three or four drops were given every two hours in a glass of water.

The results of the employment of these measures are as follow:—

First group, in which cold applications were sparingly used—

|  |  | Number. | Deaths. | Mortality per cent. |
|---|---|---|---|---|
| Cases treated without calomel or iodine, | - | 377 | 69 | 18·3 |
| ,, with calomel, | - | 223 | 26 | 11·7 |
| ,, with iodine, | - | 239 | 35 | 14·6 |
| Total of cases, | - | 839 | 130 | 15·5 |

Second group, in which cold applications were fully employed—

|  |  | Number. | Deaths. | Mortality per cent. |
|---|---|---|---|---|
| Total number, | - | 339 | 33 | 9·7 |

In 43 cases of the second group calomel was employed, with only one death. Quinia, digitalis, and other remedies were also employed.

The results of this treatment, furnished as they have been by practical physicians, such as Bartels and Liebermeister, who have no leaning towards hydropathy in the ordinary acceptation of the term as a form of quackery, deserve attentive consideration.— *Deutsches Archiv. für Klinische Medicin*, Vol. iv., p. 413.

### NORMAL TEMPERATURE IN CHILDREN.

Dr. Finlayson states as the results of observations on the normal temperature of children, that there is a daily range of temperature in them of between 2° and 3° F.; that there is invariably a fall in the evening of one, two, or three degrees, best marked between seven and nine p.m.; and that the minimum temperature is usually

reached at or before two a.m. According to Dr. Finlayson's observations, there is no definite relationship between the frequency of the pulse and respirations and the amount of normal temperature.—*Glasgow Medical Journal*, January, 1869.

### INOCULATION OF TUBERCLE.

The subject of the inoculability of tubercle has been examined carefully by Cohnheim and Fränkel. Their experiments were made with guinea-pigs, and they found that the introduction of tubercle from the human subject was followed, if the animal survived long enough, by the development of unmistakable miliary tubercle in the inoculated animals; results which agree with what may be called the positive experiments of Villemin.

They also found, however, that the same result—namely, the development of miliary tubercle—followed the introduction of other substances than tubercle.

Portions of apparently healthy organs, pieces of cancerous tumours, condylomata, sarcomata, pieces of blotting paper, charpie vulcanized caoutchouc or guttapercha, when introduced into the peritoneal cavity, gave rise to a uniform result, namely, the development of tubercle in the animal subjected to the operation. These results are directly contradictory of Villemin's negative experiments, but agree with those of Dr. Sanderson and Dr. Wilson Fox, noticed in the number of the Journal for August, 1868.

The introduction of any of the substances which were employed was followed by peritonitis, and about one-half of the animals died from this cause in from one to four days after the operation—of course at too early a period to afford any evidence of tuberculosis. In those who survived, the peritonitis became circumscribed, and a tumour with a capsular envelope was formed. Within the capsule the foreign body was to be found, when charpie, caoutchouc, or similar substances had been used, but in no instance was it possible to recognize a trace of any of the portions of the organism which had been introduced, whether normal or pathological. The alteration which the portions of cancer, tubercle, &c., underwent, were so complete as to entirely prevent their recognition, even with the microscope. It is evident, according to the authors, since the systemic infection cannot be the direct result of the inoculation—a fact which is obvious in cases where caoutchouc, &c., have been introduced, and which is in the highest degree probable as regards

the introduction of animal substances—that the cause of the phenomena must be sought elsewhere. The really effective agent is the dead and degenerated pus which is found, in every instance, as the result of the reactive inflammation after the introduction of the foreign bodies. This pus is the true foreign body, and its absorption into the economy is the cause of the subsequent pathological changes.—*Virchow's Archiv.*, Vol. xlv., p. 216.

### CURE OF SEA SICKNESS.

Dr. Dwinelle, of New York, publishes an account of a method of treating sea sickness, which he saw employed, by Dr. Le Coniat of the French navy, with remarkably successful results.

The skin over the stomach is moistened with a solution of sulphate of atropia, in the proportion of a grain to an ounce of water. A flat disc, forming the negative pole of an ordinary volta-electric apparatus, is applied over the pyloric end of the stomach. A sponge attached to the positive pole is passed, for three or four minutes, from the cardiac towards the pyloric end, varied by being occasionally passed downwards. The application is not painful, and is generally followed by refreshing sleep.

In a stormy passage from Brest to the United States of America Dr. Dwinelle, who suffered much from sea sickness, was treated in this way by Dr. Le Coniat, with great benefit; and in every instance in which he saw the remedy applied great and immediate relief followed, and generally a complete cure.—*New York Medical Journal*, January, 1869, p. 390.

### TREATMENT OF EPILEPSY.

Dr. Brown-Sequard states that his usual prescription for epilepsy is as follows:—

> Iodide of potassium, one drachm.
> Bromide of potassium, one ounce.
> Bromide of ammonium, two drachms and a-half.
> Bicarbonate of potash, two scruples.
> Infusion of calumba, six fluid ounces.   Mix.

A tea-spoonful of the mixture to be taken before each of the three meals, and three tea-spoonsful at bed time, with a little water.

In syphilitic cases he increases the amount of iodide of potassium. In administering the bromides it is necessary to give a relatively larger dose at bed time, and smaller doses in the day if sleepiness is caused. The medicine should be pushed till anes-

thesia of the fauces is produced, and an acne-like eruption appears on the face, neck, and shoulders, &c. The bromides should be continued for fifteen or sixteen months after the attacks have ceased. An occasional purgative ought to be given, and if any debility be produced by the use of the bromides, wine and nourishing food should be used, with cod liver oil, arsenic, strychnia, &c.; and the cold douche or shower bath employed.— *Diagnosis and Treatment of Functional Nervous Affections*, 1868.

WHY IS THE BUCCINATOR MUSCLE PARALYSED IN HEMIPLEGIA?

The cause of the loss of power of the buccinator muscle so often observed in hemiplegia has been the subject of frequent discussion, and is of considerable interest in reference to the diagnosis of cerebral disease.

Dr. Todd, following Sir Charles Bell, regarded the paralysis of this muscle in hemiplegia as due to the implication of the fifth nerve, from which he believed it to receive some motor supply—the long buccal nerve from the fifth being, in his opinion, a motor nerve, and associating the muscle with mastication just as its supply from the seventh nerve associates it with expression.

On the other hand, Mayo and Longet stated as the result of direct experiment, that the nerve in question is purely sensory; and Professor Turner, of Edinburgh, reports a case in the "Journal of Anatomy," Vol. i., p. 83, in which he found that the buccal branch of the fifth nerve proceeded from the superior maxillary division of the nerve, and was consequently purely sensory, as are all the branches of this division. Mr. Bankart, also, in the same journal, Vol. ii., p. 325, adopted the same view as the result of experiments on the dog. Indeed, recent anatomists both in this country and on the Continent, seem to have adopted this opinion almost universally.

From this view of the source of motor supply to the buccinator, namely, that it is altogether derived from the seventh or portio dura nerve, it would follow that this nerve must be partially affected in hemiplegia; a fact which it is somewhat difficult to reconcile with the all but invariable escape of the orbicularis palpebrarum, as shown by the patient possessing the power of closing the eye of the affected side. Trousseau lays down as a diagnostic mark of the greatest value, that however complete the hemiplegic condition may be, the eye can always be closed, while in mere facial paralysis the patient is unable to close the eye. This test,

although not so invariably accurate as Trousseau believed, is undoubtedly of the highest clinical importance, and as it necessarily implies that the nerve-fibres of the seventh pair which supply the orbicularis completely escape, as a general rule, in hemiplegia, the very frequent implication of the fibres of the same nerve, which supply the buccinator, forms a pathological problem of some difficulty.

An interesting corroboration of Todd's opinion has been furnished by two cases detailed by Dr. Clifford Allbutt, in the recently published volume of the *Transactions of the Pathological Society of London*, and by a case reported by Dr. Heslop, of Birmingham, in the *Medical Times and Gazette* for 1868, Vol. ii., p. 442. The former cases go to show that the buccinator muscle may be unaffected as regards its contractile power, while all the other muscles supplied by the seventh nerve are paralysed; a fact which would be inexplicable, except on the supposition of there being another source of motor supply for the buccinator.

Dr. Heslop's case directly suggests the source of this motor supply, by showing that the buccinator may be paralysed as a result of injury of the motor division of the fifth nerve, the seventh nerve being altogether unaffected.

Dr. Allbutt's cases, which present a remarkable similarity to each other, occurred the one in a youth of eighteen years, the other in a girl of nine years. In each the symptoms were caused by tumour of the pons varolii. In each there was paralysis of the left sixth and seventh nerves, and right hemiplegia. In each the mouth was drawn to the right side, and the orbicularis palpebrarum of the left side quite paralysed. Dr. Allbutt states that the buccinator muscle, however, and the muscles of mastication were not paralysed.

Dr. Heslop's case, which is in various respects one of remarkable interest, occurred in a patient of fifty-two years.

A fibroid tumour, occupying the middle fossa of the base of the cranium, had, as was found on examination after death, completely destroyed the Gasserian ganglion and the orbital nerves, so that not a vestige of these structures could be recognized, while both divisions of the seventh nerve were found to be perfectly healthy, and unaffected by the tumour. During life, there had been ptosis, complete anesthesia of the left side of the face and of the globe of the eye. There had been no loss of power of the muscles supplied by the seventh nerve, with the exception of the buccinator, which

was paralysed. The face was free from distortion, and the muscles of the root of the nose and forehead acted vigorously on both sides. The patient had been " constantly tormented by the food getting between the left cheek and the jaws." It is impossible not to be struck by the curious apparent completeness of the pathological demonstration afforded by these cases of the correctness of Todd's statements, supposing the phenomena to have been correctly noted. Reported by practical observers, they are an evidence that the question may be regarded as still unsettled, and they derive additional importance from having been noted without apparently any reference whatever to the point to which we have adverted.

### APHASIA.

Dr. Maudsley, in an able paper, examines the pathology of aphasia. The facts which have been ascertained are, he holds, altogether inadequate to establish the theory of Broca. There is no faculty of language having its seat in a particular part of the brain. The muscular acts of speech are strictly comparable to other co-ordinate muscular movements, such as walking, and have no need for any special faculty.

Several explanations of the phenomena of aphasia are suggested.

The patient may be unable to articulate owing to the muscular sense of the parts concerned in speech being lost, although the muscular power may remain quite unaffected. This would explain those aphasic cases in which the patient is able to repeat phrases which are spoken to him, although he cannot spontaneously articulate a word; the sense of hearing taking the place of the lost muscular sense in these instances, as the sense of sight does in patients in whom the muscular sense of the arm has been lost, and who cannot hold an object unless their eyes are directed to it.

In some cases there is *mental defect.* An aphasic person may imagine that his mental operations are proceeding in the most perfect manner when they are in reality very defective. In these cases, which are the majority, the patient cannot call up the idea while he may be himself convinced that it is only the word for it which is deficient.

In other cases, there may be *injury of some of the nerve-fibres,* which communicate between the grey matter of the convolutions and the motor centres, so that the patient cannot express his idea.

Or the *motor centres,* from which the muscular acts of speech

proceed may be injured, and, as a result, the memory of words and of how to say them may be lost.

The facts which have been observed point to lesion, not of the third left frontal convolution, but of the corpora striata, or of some motor nuclei in their neighbourhood; or of some of the communicating fibres between these and the grey matter of the convolutions which constitutes the primary or ideational centre.—*Lancet,* 1868, Vol ii., p. 690.

### CIRRHOSIS OF THE LUNG.

Dr. H. Charlton Bastian contributes a case of cirrhosis of the lung, and an analysis of thirty cases of the disease. He has arrived at conclusions almost identical with those originally put forward by Sir Dominic Corrigan. Dilatation of the bronchi, however, has not been found to be universally present in these cases, and is not a necessary consequence of cirrhosis, as was supposed by Corrigan.

Dr. Bastian regards the cirrhotic condition as totally distinct from chronic pneumonia. It is a fibroid growth of which pneumonic inflammation may be the starting point, but which has no pathological kinship with that process.

Again, cirrhosis is equally independent of phthisis. Of the thirty cases tabulated, only five presented any evidence either of tubercle or of chronic lobular pneumonia. In each of these five the amount was insignificant, bore no proportion to the amount of fibre growth, and could only be regarded as accidental.—*Transactions of Pathological Society of London,* Vol. xix.

### TREATMENT OF VALVULAR DISEASE OF THE LEFT SIDE OF THE HEART.

Professor Gerhardt proposes to treat fibrinous deposits and valvular diseases of the left side of the heart by the inhalation of alkaline solutions. A medicinal agent administered by the mouth must be absorbed and carried into the portal circulation, thence to the right side of the heart, after which it must traverse the lungs before arriving at the left side of the heart, and in this transit it must be much diluted.

On the other hand, medicinal substances introduced by the air passages, are carried by the pulmonary veins directly to the left side of the heart, which they reach in a much more concentrated form than if administered in the ordinary manner.

The solution used by Gerhardt contains from a half per cent. to

one and a half per cent. of bicarbonate of soda. The great value of this method he believes to depend upon its power of preventing fibrinous deposits upon inflamed or otherwise diseased valves, and of dissolving already existing vegetations. He recommends soda, because of the chemical action of its carbonate on exhausted muscle, and because of its diuretic effect. Potash cannot be used owing to its paralysing effect upon the muscular structure of the heart. Several cases are detailed in which the employment of this method has been followed by good results.—*Deutsches Archiv. für Klinische Medicin*, Vol. v., p. 207.

### DIAGNOSIS OF POLYPI OF THE HEART.

Dr. B. W. Richardson gives a series of rules for the diagnosis of the occurrence of fibrinous deposits in the heart.

The symptoms are those of hemorrhage without visible loss of blood. They are falling temperature; pallid or livid surface; feeble, irregular, or fluttering pulse; muscular prostration, and gasping respiration. These symptoms may depend on nervous lesion, hemorrhage, flux, exudation, accumulation of fluid in the pericardium, or obstruction of respiration, so that it is necessary that all these be excluded. Dr. Richardson then proceeds to enumerate the physical evidences of the separation of fibrin:—

"The first of these is a peculiar dyspnea. I allude now specially to cases in which the obstruction is on the right side. The dyspnea is most distressing; it admits of no relief. If you ask where is the oppression, the finger is invariably pointed to the heart; if the patient can speak and explain his symptoms, he will describe that he has no difficulty in drawing in breath—that he has no pain, in the ordinary sense of the term, but yet he feels that he is sinking from inability to breathe. This dyspnea lasts to the end, and there is often intense working of the alæ of the nose. The explanation of the dyspnea is that the blood has been cut off from the air, so that, whatever efforts are made to breathe, there is no efficient result. I have already said that in the young obvious signs of emphysema attend the condition.

"There is dyspnea, again, when the obstruction caused by fibrin is on the left side; but, though severe in character, it is not of the same type as is described above. It is congestive rather in nature, and is referred by the sufferer to the chest generally, not specially to the heart.

"From the dyspnea I turn next to the heart itself. I was at one time of opinion that few, if any, special physical signs of separation of fibrin exist as reliable signs. A larger experience has, to a considerable extent,

modified and corrected that opinion, and indeed, during the last five years, I have detected not only fibrin within the heart, but the actual position of the mass in regard to the cavities, with extreme precision. The points I keep in mind are as follows:—If, with all the conditions likely to lead to separation, I find the action of the heart feeble and irregular, I make a careful examination with the stethoscope for the two sounds of the heart on the right and on the left sides of the organ. Whatever theory we may adopt as to the cause of the heart's sounds, one thing is certain— that, in health, the tricuspid and mitral valves act together, that the pulmonary and aortic valves act together, and that the first and second sounds respectively are coincident with the simultaneous action of those valves which move together at the same time. When, therefore, in any given case, the action of the valves on one side of the heart is impeded— when, for example, a mass of separated fibrin interferes with the valvular movements—then the sounds produced by the valves on the impeded side will be reduced or even lost altogether. It is possible to detect this. In a case I saw with Mr. Spencer Wells, where fibrin was being laid down on the right side of the heart, this line of diagnosis was so easy that he expressed to me it had only to be practised once to be recognized ever afterwards. Suppose, then, that the separation is on the right side of the heart, there will be feeble or deficient first and second sounds over the line of the right side of the organ—that is to say, in the line of the heart by the sternum. Turning, however, to the left side, both sounds of the heart will be heard.

"Supposing the separation of fibrin to be on the left side, these physical signs will be simply reversed—that is to say, the sounds of the organ will be faint or inaudible on the left, audible and distinct on the right side.

"One other distinctive point is worthy of attention. When the heart is blocked up with fibrin on the right side, its impulse is reduced, and its action is feeble throughout. When, on the other hand, the organ is blocked up on the left side, the action as a rule is for a long time irregular, tumultuous, struggling.

"In some rare cases there is separation of fibrin on both sides of the heart, in which the prominent symptoms are those of obstruction in the right cavities."—*Medical Times and Gazette*, Nov. 21, 1868.

### AUSCULTATION OF THE ŒSOPHAGUS.

Dr. Hamburger advocates the employment of auscultation as a means of diagnosis in affections of the œsophagus. The present elements of diagnosis, namely, pain, dysphagia, and the introduction of a probang, are in many cases insufficient. Auscultation may be applied to the examination of the œsophagus, by listening

during the act of deglutition, either in the neck to the left of the trachea, from the hyoid bone to the supra-clavicular region, or in the back, to the left of the spine, from the sixth cervical to the eighth dorsal vertebra.

With some practice, the auscultator can distinguish, during deglutition—1, the sound produced; 2, the form of the substance swallowed; 3, the energy of the muscular contraction; 4, the rapidity with which the act of deglutition is completed; and finally, 5, the direction taken by the substance which is swallowed. For purposes of auscultation it is necessary that the patient should swallow a liquid, the ordinary alimentary bolus not being suitable.

The sound is altered under the influence of various morbid conditions. It is replaced by a friction sound when the mucous membrane has lost its smoothness, as in ulcerations, diphtheritic and other exudations, and when morbid growths are present.

The form which is assumed by a substance passing through the œsophagus resembles that of an egg with the small end uppermost. In states of weakness, in phthisis, in advanced age, and the like, the circular fibres of the œsophagus present no resistance to the passage downwards of the substance swallowed, which accordingly assumes more of a funnel shape. The rapidity of the passage of a substance through the œsophagus can be estimated by applying the left ear opposite the lower end of the œsophagus, in the back, to the left of the spine, and, at the same time, embracing the thyroid cartilage with the thumb and forefinger of the left hand. By this method, the precise moment can be ascertained at which the act of deglutition commences, which is marked by the elevation of the thyroid cartilage; and, by the ear, the time can be ascertained at which the sound of its passage to the lower end of the œsophagus becomes audible. Between these two periods there is an appreciable interval.—*Medizinische Jahrbücher,* Vol xvi., p. 123.

## PHYSICAL EXAMINATION OF THE STOMACH.

Dr. Fenwick recommends the employment of auscultatory percussion for the purpose of defining the extent and position of the stomach. The mode of employing this method of investigation is as follows:—The cup-shaped end of a Camman's stethoscope is applied to the epigastrium at a point where gas has been previously ascertained by percussion to exist. With the finger, a point close to where the stethoscope is placed, is smartly struck. A distinct shock is felt in the ear applied to the stethoscope. The tap is

repeated, at varying distances from the stethoscope, till a point is reached at which the shock is no longer transmitted in this direct manner. This marks that the boundary of the stomach has been reached in this direction. By percussing the patient, when lying on one side, and afterwards when on the other side, and on the back, the gas may be made to distend each part of the stomach in turn, and an outline of the organ can be mapped out.

The principle on which the method depends is that the direct transmission of the shock to the ear ceases when the blow is made beyond the organ over which the stethoscope is applied. This principle had been previously applied to the examination of the heart by Drs. Camman and Clark.—*The Stomach and Duodenum*, by Dr. Fenwick, 1868, p. 4.

### SITUATION OF THE STOMACH.

Professor Luschka contributes an important paper on the normal situation and relations of the stomach. According to his opinion, anatomists in general have fallen into the error of believing that a portion of the stomach is to be found in the right hypochondrium. This traditional mistake has been repeated in the principal anatomical works. Weber, Krause, Hyrtl, and the editors of Quain's Anatomy, all state that the pyloric end of the stomach reaches the right hypochondrium. The practical importance of an accurate knowledge of the situation of this organ, with reference to the diagnosis of its diseases, is so considerable, and the authority of Luschka on subjects of this kind is so deservedly high, that we have considered it desirable to summarize his conclusions.

From different methods of investigation he has arrived at the result, that about three-fourths of the stomach is situated in the left hypochondrium, and about one-fourth in the epigastrium. The portion contained in the left hypochondrium has a vertical direction, or from above downwards; that in the epigastrium, which is the pyloric portion, and is about two inches long, has a nearly transverse direction. When the stomach is pretty full, this portion is situated in front of the first two lumbar vertebræ, about three finger breadths below the ensiform cartilage. In many cases it does not pass beyond the median line, and, as a rule, it may be said that the pyloric end does not pass beyond a vertical line passing through a point, midway between the centre and the right margin of the sternum.—*Prager Vierteljahrschrift*, Vol. i., p. 114.

### DIAGNOSIS OF THE SEAT OF INTESTINAL OBSTRUCTION BY THE INJECTION OF FLUIDS.

In his posthumous work on intestinal obstruction, Dr. Brinton stated that the seat of intestinal obstruction can be readily ascertained by observing the amount of fluid which can be injected into the intestine.

If only a pint can be introduced, the stricture is not lower than the upper end of the rectum; if one and a-half, or two or three pints can be introduced, the stricture is at a corresponding portion of the sigmoid flexure; a larger quantity points to the colon, but here the indications are less precise. In one instance, in which the stricture was seated at the upper part of the ascending colon, nine pints of fluid were introduced.

Dr. C. Hilton Fagge, in an elaborate paper on intestinal obstruction, draws attention to the fact that fluids may be injected so as to pass through a constriction, or beyond a tumour, while the intestinal contents may be unable to pass from above downwards. He quotes a case of disease in the sigmoid flexure, in which four pints of warm water were injected. Of this only a small portion returned, the greater part being retained, and no doubt adding injuriously to the accumulation already existing within the intestine.—*Guy's Hospital Reports*, 1869, p. 319.

Dr. Von Trautvetter has examined the question of how far fluids can be made to ascend in the intestine.

His experiments were made by injecting a solution of prussiate of potash, and by treating the intestine, when laid open afterwards, with a solution of perchloride of iron. A blue colour was produced, marking exactly the distance to which the injected fluid had penetrated. By comparative experiments on dead and living animals, and by the, as it appears to us, unjustifiable experiment of injecting a moribund patient, he arrived at the conclusion that the intestine during life is capable of receiving the same amount of fluid as after death. In the absence of obstruction from stricture, morbid growths, impacted feces and the like, injections can be made to penetrate to the commencement of the colon, but for effecting this a long elastic tube is indispensable.—*Deutches Archiv., für Klinische Medicin*, Vol. iv, p. 476.

### EARLY SIGN OF NEPHRITIC IRRITATION.

Dr. Owen Rees has found that a valuable indication in the early stages of kidney disease may be derived from the presence in

the urine of *blood-extractives*, which may be recognized before the appearance of albumen in that fluid. The escape of the extractives shows that a constant and important drain is going on from the blood, and is to be regarded as a warning of approaching albuminuria. The *blood-extractives* may be detected by the addition of tincture of galls to the urine, which immediately precipitates the extractive matters. After five or ten minutes, the earthy and potash salts will be thrown down by the spirit contained in the tincture, so that it is necessary to remember that the reaction produced by the extractives occurs immediately after the addition of the tincture.—*Guy's Hospital Reports*, Third Series, Vol. xiv., p. 431.

## METHOD OF APPLYING NITRATE OF SILVER IN ERYSIPELATOUS INFLAMMATION.

Mr. Higginbottom, F.R.S., of Nottingham, to whom the profession is indebted for the knowledge of the value of nitrate of silver in external inflammations, complains that the directions given by him have been incorrectly copied by writers on the subject. His mode of applying the remedy is as follows:—

" The affected part should be well washed with soap and water, then with water alone, to remove every particle of soap, as the soap would decompose the nitrate of silver ; then to be wiped dry with a soft towel. *The concentrated solution of four scruples of the nitrate of silver to four drachms of distilled water is then to be applied two or three times on the inflamed surface and beyond it, on the healthy skin, to the extent of two or three inches.* The solution may be applied with a small piece of clean linen, attached to the end of a short stick ; the linen to be renewed at every subsequent application. As the solution of nitrate of silver is colourless, it is necessary to pass a little linen, just moistened, over every part where it has been used, in order to be equally diffused, so that no part be left untouched.

" In about twelve hours it will be seen whether the solution has been well applied. If any inflamed part be unaffected, the solution must be immediately reapplied. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread ; but is then generally much less severe, and is eventually checked by repeated application. It is desirable to visit the patient every twelve hours, until the inflammation is subdued.

" By these means we have complete control over the disease.

" For the successful application of the nitrate of silver, the ordinary

brittle stick, either solid or in solution, must be used. Not the 'lunar caustic points perfectly tough,' nor the crystals and cake used for photographic purposes."—*The Practitioner*, January, 1869, p. 34.

## TREATMENT OF RHEUMATIC FEVER.

Especial attention has been recently devoted to the different methods of treating acute rheumatism, and a considerable amount of information has been collected with regard to the subject. On no question relating to practical medicine does there exist greater diversity of opinion, both in this country and abroad. Authorities whose views are entitled to the highest consideration, recommend plans of managing the disease which differ in the most extreme degree from each other. General and local blood-letting, antimony, alkalies, colchicum, opium, quina, and blisters (a list which might be easily much increased), are all therapeutic agents of undoubted power, but the majority of them are certainly very dissimilar in their *modus operandi.*

On the other hand, some physicians of the greatest eminence have expressed serious doubts as to whether benefit is derived from the use of any remedy whatever in dealing with the disease.

Trousseau, who was far from being a sceptic as to the powers of medicines, and who did more than any physician of his generation to extend the field of therapeutics in France, taught that except to relieve excessive articular pain, and to promote perspiration, we should not interfere with the natural course of the disease in the absence of any special indication requiring attention.

The first and essential step towards the estimate of the value of any mode of treatment in acute rheumatism, as in any disease, is to ascertain what is the natural course, duration, and termination of the affection when altogether uninfluenced by remedial measures. In this respect it is impossible to over-estimate the importance of a paper on the "Natural History of Rheumatic Fever," by Drs. Gull and Sutton, read before the Royal Medical and Chirurgical Society, of which an abstract appeared in the weekly journals.

Dr Sutton had previously published, in *Guy's Hospital Reports*, an account of some cases of acute rheumatism observed in the wards of Dr. Gull and Dr. Owen Rees, in which the expectant method was carried out, the patients having been treated for the most part with mint water. From a further experience of cases treated in the same manner, Drs. Gull and Sutton state as their opinion, that

the rheumatic process runs its course as favourably under the expectant treatment as under the treatment by drugs, and that the heart does not become affected more frequently in cases managed on this plan than in those which have been submitted to the ordinary modes of treatment. These conclusions are based on an examination of the history of twenty-five cases treated by mint water. Of these patients none had previously suffered from rheumatism. Twelve had heart disease on admission into hospital, two gave doubtful indications, and eleven were free from heart disease. No patient was attacked with organic disease of the heart while under treatment. The total duration of the disease from the commencement, including the period which elapsed before the patient came into hospital, was on the average seventeen days. The authors' report, as the result of their observations regarding the management of the disease, that

"At present, therefore, as regards treatment, our cases seem to show that we are limited to a careful regimen of the patient. Rest, mechanical and physiological—rest in the very outset of the disease. We ought not to wait until the rheumatic process has become well developed in the joints. To regulate the temperature. To moderate excessive skin function by sponging the surface of the body. To allay pain, by placing the patient in an easy position, and sometimes by opiates. To sustain the organic nerve power by light diet, and occasionally by small doses of alcohol. To procure rest by the simplest means, especially avoiding such movements of the body as may excite the circulation. In fine, to place the patient in a physiological state of mean rest, if it may be so termed, of the nervous, the circulatory, the muscular, and digestive systems. To do this fully will often tax all our energies, and require often more consideration than is requisite for prescribing any supposed appropriate drug treatment. We are, therefore, at present, advocates of the exactest treatment of the patient under acute rheumatism, though we may doubt the value of so-called specific drugs."—*The Lancet,* January 16th, 1869.

Whatever may be our opinion as to the propriety of a plan of treatment such as that proposed by the authors, it is evident that their communication is of the highest value as a contribution to our knowledge of the natural history of the disease, and as furnishing a standard for comparison with future observations regarding its therapeutics.

From America we have a report of a series of thirty cases of acute rheumatism, furnished by Dr. J. M. Da Costa. The treat-

ment employed was the administration of bromide of ammonium in doses of from fifteen to twenty grains every third hour, well diluted. The medicine was omitted at night, a patient taking from one and a-half to three drachms in the twenty-four hours.

Dr. Da Costa regards it as a proof of the beneficial action of the bromide treatment, that in no case did endocarditis arise after the patient had been put under treatment. In one case pericarditis was developed while the patient was in hospital. We have seen that as far as endocardial inflammation is concerned the expectant plan, according to Drs. Gull and Sutton, gives results equally favourable, while under it no pericardial inflammation became developed.—(*Pennsylvania Hospital Reports*, 1869, p. 63.)

An interesting account of the method of treatment of acute rheumatism employed by a number of the hospital physicians of London, and of the provinces, has been published in the *British Medical Journal* for January 2nd and 9th, of the present year.

The great majority are in favour of the alkaline treatment pushed to a greater or less extent. Of fifteen physicians who have expressed their opinions, ten adopt, in the main, this mode of treatment; one is in favour of blisters; one of aconite; and three advocate a mixed plan of treatment.

We have considered it as likely to be of value to add, as an appendix to this report, the opinions of a number of the principal hospital physicians of this country, with regard to the treatment of this disease, which have been kindly furnished to the editor of this journal for the purpose.

We believe that these statements will be found to possess a permanent interest. Embodying the results of the matured experience of some of the ablest members of the profession, and impressed with the eminently practical and eclectic character which has always distinguished Irish medicine, they furnish an important complement to the statements of opinion which have been already published on this subject.

## OPINIONS OF IRISH PHYSICIANS ON THE TREATMENT OF ACUTE RHEUMATISM.*

*From* JOHN T. BANKS, M.D., M.R.I.A.; Physician to Richmond, Whitworth, and Hardwicke Hospitals; ex-King's Professor of Practice of Medicine.

THE treatment which I rely upon in rheumatic fever may be termed eclectic, inasmuch as I do not confine myself to any of the so-called plans of treatment. The remedial agents I generally employ are alkalies, opium, blisters, and quinine. I believe it to be impossible to lay down rules applicable to all cases, but with the results of this complex treatment I have reason to be satisfied. The value of quinine in obstinate and frequently relapsing cases of rheumatic fever is not, I think, sufficiently recognized. Without claiming for any remedy, or any combination of remedies, the power of preventing with certainty the advent of complications, I am nevertheless impressed with the belief that treatment judiciously directed so as to meet the exigencies of each individual case has the effect of shortening the disease and diminishing the proclivity to cardiac inflammation.

*From* THOMAS E. BEATTY, M.D.; ex-President King and Queen's College of Physicians; Physician City of Dublin Hospital; late Professor of Midwifery in the School of the Royal College of Surgeons.

Having had the misfortune to have ample opportunity of studying rheumatic fever in my own person, I think I am in a position to offer some observations upon it. My first attack was in the year 1823, the next in 1826, another in 1828, then in 1836, the next in 1841, followed by another in 1843, after which came one in 1851, and the last was in 1864. These were all great and serious attacks, besides which numerous minor ones and threatenings occurred in the intervals. The earlier attacks were all acute rheumatism, and as years crept on they assumed the nature of rheumatic gout. During these attacks I had the kind care and

* These communications were asked for at the suggestion of Professor Cuming. Unfortunately only the briefest time could be allowed for their preparation, and the editor desires to say how exceedingly obliged he feels to those gentlemen who, at the very busiest season of the year, found time to furnish them, and to express his regret that it was impossible to collect the opinions of several eminent provincial physicians, whose views on this subject would have been of much value.

attendance of the most eminent physicians in Dublin, and once, in
1826, Dr. Stock, of Clifton, took charge of me. It can be
imagined that in such a long range of years, and passing through
so many able hands, a variety of treatment was adopted, but sad
experience compels me to say that in no instance did medicine
appear to have any effect in controlling or shortening the disease.
I was never less than a month, often two months, in bed, and
another month was required to enable me to go to work, and in
1836 and 1864 I was six months disabled by each attack. I had
the good fortune to escape any threatening of cardiac disease.
When the attacks were over I was perfectly free from all disease
or stiff joints, and I am now, thank God, as well as any man alive.
The treatment was, of course, of various kinds. Alkalies and
colchicum were given, but I don't think in large amount, and the
alkalies certainly not as largely as is now recommended. I have a
lively horror of the nights passed in the beginning of each attack.
A state of semi-delirium when awake, and frightful dreams in
broken sleep, to be succeeded by profuse acid perspiration, which
caused an indescribable exhaustion, and was abominable in smell,
made the advent of night be regarded with dread, and I eagerly
watched the first dawn of daylight to have the window shutters
thrown open, and thus put an end to what had been a long state of
suffering through the weary hours of darkness. As joint after
joint became affected, I found the greatest relief in having the joint
enveloped in a thick layer of raw cotton, completely covered by
oiled silk. This at once gave ease to acute pain, and generally in
forty-eight hours that joint was well, but it often happened that
the pain returned two or three times to the same joint. I have
had at the same moment every joint of my body, including the
joints of the neck, in a state of acute suffering. I constantly
observed, when any of the large joints were affected, such as the
knee, shoulder, or elbow, that I could localize the disease to one
of the small articulations connected with it. Thus in the knee I
could distinctly discern that the seat of the disease was the articu-
lation of the fibula with the tibia, and I could cover the whole of the
part from which the pain proceeded with the point of my finger.
And in the shoulder, where the whole joint appeared to be suffer-
ing, I could localize the entire mischief to the junction of the
clavicle with the acromion process; and in the elbow the joint
of the radius with the ulna was the seat of the disease. Opiates
at night to procure sleep, and the cotton and oiled silk were what

I derived most benefit from. In my own practice the most rapid recoveries I have seen in young persons have been from the free use of lemon juice, from one to two ounces of which were given every third or fourth hour.

*From* CHARLES BENSON, M.D., Physician to the City of Dublin Hospital, and Professor of Practice of Medicine in the School of the Royal College of Surgeons.

You ask what is the impression made on my mind by the experience which I have had in the treatment of acute rheumatism? " Does the alkaline, the blister, or any other treatment unmistakeably influence the duration of acute rheumatism, or lesson the per centage of hearts damaged ?"

I am glad you ask for the impression made on my mind, and not for precise statistics. I could not well supply the latter, but I have no hesitation in stating my conviction that treatment *does* influence favourably, the duration of the disease, and lessen the per centage of hearts damaged.

The treatment which I generally prefer is " the alkaline;" giving the bicarbonate of potass, for the most part, with lemon juice in effervescence, sometimes with decoction of cinchona, or with colombo, according as may best suit the stomach, or condition of the patient in other respects. I usually combine colchicum and digitalis with these, giving, in 24 hours, from 30 to 60 minims of each, and at bed-time an opiate. My favourite opiate is Dover's Powder—10 or 15 grains at night, and, if there be much suffering, 5 grains three or four times a day in addition. I think the colchicum helps to eliminate the *materies morbi* from the system, and I fancy the digitalis promotes the same object, while by its sedative influence it lessens the danger of cardiac complication. I do not prescribe the bicarbonate of potass in such large quantities as Dr. Fuller recommends. It is too lowering for the citizens of Dublin. I seldom use more than 4 drachms in the day. Sometimes I give a little iodide of potassium also, and when the patient is scrofulous or tainted with syphilis, this appears to be useful. In delicate or scrofulous subjects I give cod-liver oil freely, and the iodide of iron or some other chalybeate. I regulate the bowels with injections of soap suds, to which I add a little soda or potass to follow up the alkaline plan, without too much distressing the stomach. When a joint is particularly painful I put on poultices of linseed meal, containing some

potash or soda, and when effusion takes place into a joint I often have recourse to a blister. The jerking pulse and impulse which precede the murmur of endocarditis for 12 or 24 hours suggested to me the employment of digitalis, and I think it is of use as I said. When the heart is threatened, which may always be known by the jerking pulse and impulse, I apply blisters to some of the joints, and just below the left nipple—pushing the opiates and digitalis remedies still further.

Under this management, which is the alkaline treatment somewhat modified, I think I shorten the duration of acute rheumatism without protracting the duration of the convalescent period; and that I lessen the percentage of hearts damaged. I thing so, but rheumatism is so fickle in the manifestations, and so variable in its course and duration under any treatment, that I can only speak of my conviction, or belief, or, if you will, my " impression."

*From* Sir D. J. CORRIGAN, Bart., M.D., &c., Physician in Ordinary to the Queen in Ireland.

There has always appeared to me to be very unnecessary dispute carried on about different modes of treatment. I do not see why opiate treatment is to exclude blisters, &c., or *vice versa*. To adhere exclusively to any one line of remedies is no better than homeopathy.

*From* JOHN T. DRENNAN, M.D., Senior Physician to the Belfast General Hospital.

There is nothing novel or imposing in my treatment of acute rheumatism. Blankets and cotton wadding as external application; moderate purgation, followed by the administration of the salts of potash (the bicarbonate and nitrate and the iodide of potassium), with opiates, or occasionally colchicum. Bark or quinine when the fever subsides, and the tongue becomes clear. I have little experience of blistering, except when the heart is affected, and this is certainly a very rare occurrence in my practice.

Of course the above medication is sometimes materially modified, *e. g.*, a man had diarrhea and delirium in conjunction with rheumatism, and was treated almost exclusively by opiates with apparently excellent effect.

I have no personal experience of bromide of potassium, actea, &c., &c.

*From* HENRY FREKE, M.D., Vice-President College of Physicians; Physician and Lecturer on Practice of Medicine Steevens' Hospital, Dublin.

My experience as to *the effects of treatment* in rheumatic fever being exclusively what has been asked for, I refrain from expressing any opinion on the pathology of that disease, or alluding to any change which I conceive may of late years be recognized in its character and type. The latter has, however, in my opinion, an important bearing on the question of treatment.

As of value in *contrasting* the effects of different lines of treatment, it may perhaps be advantageous to observe that my experience of rheumatism for the last four-and-twenty years has been chiefly confined to one class of individuals; to men who in occupation, habits, diet, clothing, &c., were in every respect similarly circumstanced. I allude to the Royal Irish Constabulary forces, as fine a body of men and as well dieted and clothed as any in the country.

Among the men of this force I have seen much rheumatic fever, and have employed almost every line of treatment that appeared to me to hold out a prospect of affording relief, including lemon juice, alkalies, bark, opiates, &c., I have not for many years employed general bleeding. The result of my experience is simply this:— I am strongly of opinion that although we can mitigate symptoms, we at present know of no means whereby we can cut short the disease, or with any approach to certainty reduce its duration. That there is no constancy to be recognized in the duration of the disease, but that either with or without treatment it *may* terminate in a fortnight or *may* last for two months. That if two patients in apparently similar circumstances, and presenting in every respect similar symptoms, be placed on the same line of treatment, one will occasionally recover in the course of twelve or fourteen days, while in the other the disease will frequently have a duration of seven or eight weeks, and that *whatever* be the line of treatment adopted.

*From* SAMUEL GORDON, M.D., Physician Richmond, Whitworth, and Hardwicke Hospitals; Lecturer on Practice of Physic Carmichael School of Medicine.

I have no doubt but that the alkaline and diaphoretic plan of treatment is of essential service in shortening the duration of rheumatic fever, and in lessening the probability of cardiac diseases. Even unaided, when carefully carried out it is of great value, but I attach much importance to the constitution of the patient affected, and to

the fact of it being a primary attack or otherwise. The preparation which I generally use is the combination of bicarbonate and citrate of potass—that is, I give very large doses of bicarbonate of potass in effervescence with lemon juice—giving a large excess of the bicarbonate.

If the patient be of a strong constitution and the attack a primary one, I usually add small doses of tartarized antimony with great advantage.[a] I think that when the depressing effect of antimony on the heart can be produced without vomiting, it proves most serviceable in averting cardiac complications. This was the plan of treatment usually adopted by the late Dr. Crampton, after he had given up the practice of venesection, and it was followed by great success. I need not say that it does not interfere with the use of opium but rather assists it. The use of opium I consider to be indicated in those cases in which the fibrous structures are much engaged, and when not contra-indicated I always prescribe it in the form of Dover's powder; but I never use the opium without having first tried the alkaline and diaphoretic plan for at least 24 hours.

In asthenic constitutions or when the attack is not primary I find great advantage from the addition of large doses of the iodide of potassium, combined in this as in all other cases in which I use it, with small doses of aromatic spirit of ammonia.

When there is much local distress I apply the vesicating collodion freely, and afterwards a warm solution of the bicarbonate of potass covered with French wadding and sheet gutta-percha.

With regard to the occurrence of endocarditis as indicated by endocardial murmur, I have long taught that the sign is most fallacious; the most severe, and most intractable cases of endocarditis which I have witnessed have been unaccompanied by any murmur (*vide Dublin Hospital Gazette*, April 1, 1857), and on the contrary I am satisfied that on account of the existence of an endocardial murmur, numbers of cases are recorded as endocarditis in which no inflammatory exudation has occurred.

*From* Dr. HAYDEN, Fellow and Censor King and Queen's College of Physicians; Physician to Mater Misericordiæ Hospital; Professor of Anatomy and Physiology in the Catholic University.

In acute rheumatism of the decidedly sthenic type, of which I have

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[a] I remember, when a pupil of Dr. Robinson's at the Armagh County Infirmary, being impressed with the markedly beneficial effect of small doses of tartar emetic in sthenic cases of acute rheumatism, as here recommended by Dr. Gordon—(EDITOR).

seen comparatively few cases within the last six months, I have given full trial to the alkaline treatment.

My experience of it is, on the whole, favourable. It never fails to alleviate articular pain when pushed to the extent of rendering the urine alkaline in reaction. It should always, when not contra-indicated by other considerations, be pressed to this point, short of which it fails to give relief.

I am convinced, however, that the alkaline treatment, carried even to the point just indicated, does not confer certain immunity from cardiac complication, *e. g.*, a man aged forty-five, temperate, was admitted to hospital under my care on the 5th May, 1868, suffering from acute articular rheumatism, engaging most of the larger joints, but chiefly the left elbow; the cardiac sounds and action were normal. He was at once put under alkaline treatment as follows, viz. :—

> ℞. Acetat. Potass. ℨiv.
> Bicarbon. ℨii.
> Tinct. opii. ℨi.
> Mist. Camphor ad. ℥viii.
> St. coch. mag., 2nd q. horâ.

On the following day the urine was neutral, and the articular pains less severe, and on the next (May 8th) the urine was decidedly alkaline in reaction; but the patient was not so well. He had raved through the night, and was fidgety and somewhat incoherent; pupils contracted, and conjunctivæ injected. He likewise had cough with mucous expectoration, and complained of pain in the situation of the right nipple. Cardiac sounds normal, and action rapid; cardiac complication anticipated.

May 9.—*Mane;* patient rather pale; pupils much contracted; pulse 144, weak, and less full; respiration quick and embarrassed. He is incoherent, a loud double friction-sound audible over the entire precordium, but loudest and most distinctly of an " attrition" character at the apex; no increase in area of precordial dulness. Mercury was now substituted for the alkalies, and wine was given in doses of one ounce every second hour. He became rapidly worse, and died at 8 p.m., having had a fit of convulsions a short time previously. A *post mortem* examination was not permitted, but the area of precordial dulness was ascertained by percussion to be much extended; the precordium likewise projected.

Here then was an example of pericardiac, and likewise in all

probability of meningeal engagement in acute rheumatism, whilst the blood was actually saturated with alkali.

In the sub-acute form, or that in which the febrile symptoms are less decidedly acute and sthenic, the pulse under 100, the tongue but moderately coated, the skin not remarkably hot, and but barely moist, urine not copious, and exhibiting lithates in small proportion, articular pains not urgent, and swelling moderate—in cases of this character, of which latterly I have seen but very few, I have found the best treatment to consist in lemon-juice, wine, and sustenance. Cardiac complication is very rare.

During the last six months rheumatism of the low or asthenic type has been very prevalent in Dublin, and almost to the exclusion of the ordinary acute form of the disease. It has been characterized by severe pain of a singularly migratory character, in the fibrous structures of and in the vicinity of the larger joints, but rarely engaging the synovial membranes; indeed, in no instance in my experience, save those of the wrist-joint and hand. The latter joints have been in many instances so suddenly invaded that in the course of a single night they have become swollen, red, and acutely tender, there having been no appearance whatever of such engagement on the preceding day, and only the premonitory symptom of slight stiffness.

The heart or pericardium (frequently both) has been engaged in the great majority of these cases, and the treatment which I have found most efficacious has been opium in large doses (gr. ii. of the watery extract twice or thrice daily), wine, porter, and animal food. I have already published a collection of these cases.—(See *British Medical Journal* of March 27th and April 3rd, 1869.)

*From* HENRY H.* HEAD, M.D., M.R.I.A.; Fellow of the College of Physicians; Physician to the Adelaide Hospital.

The success that has attended what may be termed the protective treatment of acute rheumatism, without medication, has led me to reconsider the opinions I had previously formed on the treatment of the disease. The experience of the last four years in the Adelaide Hospital has convinced me that every case of rheumatic fever should be treated strictly in accordance with the rules laid down by those who have adopted the "blanketing" system, and that the medicinal treatment, properly so called, should be added to it. It is difficult, if not impossible, to compare justly the success of the different methods of treatment which have been

recommended, unless similar cases be similarly circumstanced with regard to the non-medicinal portion of their management, viz., temperature, protection from cold, rest, diet, &c. It cannot be denied that in hospitals too little attention is generally paid to careful nursing, and that patients are allowed to expose themselves to cold air, when their bodies are bathed in profuse perspiration, such exposure being the frequent cause of metastasis and cardiac inflammations.

The result of my own observations has been decidedly in favour of the treatment by alkalies and their salts, in combination with the vegetable acids, in cases where the symptoms are very acute, characterized by quick, hard pulse, high temperature, and acid secretions, and where the constitution of the patient has been hitherto good; and I think I can assert, with perfect confidence, that where this course has been pursued, in combination with careful protection, cardiac complications have been extremely rare in cases where there was undoubted evidence that such lesion did not previously exist. There is, however, a good deal of difficulty in deciding this question, as the fatigue and exposure to which patients are subjected whilst being conveyed to hospital frequently cause an attack of endocarditis, which may undoubtedly exist without giving rise in its early stage to the usual physical signs, which only become apparent when lymph is effused. Two cases have recently come under my notice, in which the endocardial murmur was not observed, although carefully watched for, until the convalescence of the patient was considerably advanced, and at least twelve days had elapsed after the occurrence of symptoms, which led me to fear the existence of endocarditis, and which occurred a day or two after the patient's admission into hospital.

In the case of patients who have suffered from repeated attacks of rheumatism, when the character of the fever is low, or the constitution previously bad, the alkaline treatment (if adopted at all) should be carried out with great caution, and should be combined or very soon followed by the use of quinine or bark.

Where the joints affected are numerous and the pain is very acute, I have found very great relief afforded by the blistering method suggested by Dr. Herbert Davies; but although the alleviation of suffering is considerable, I do not consider that this treatment shortens the duration of the attack. It is, in fact, impossible to lay down any one rule suitable in all instances, and whatever may be the theory regarding the nature of the disease,

there can be little doubt that each case should be treated according to its own peculiar conditions.

*From* ALFRED HUDSON, M.D., Dub.; M.R.I.A.; Fellow College of Physicians; Physician to the Meath Hospital.

My strong impression is that the early and free exhibition of the alkalies or their neutral salts is prophylactic of cardiac affections: I even believe that they are the best curative measure which can be employed when endocarditis has actually supervened.

In several instances I have known an endocardial murmur which, commencing at an early period, had persisted throughout the illness, to disappear gradually under the influence of large doses of the neutral salts, more especially of the acetate and nitrate of potash. One of these cases was so striking as to be worthy of mention.

A gentleman, aged twenty-five, complained of tightness and pain in the precordial region, with a well-marked endocardial murmur at the apex about the end of the first week of rheumatic fever.

This murmur continued unchanged in seat or character during the illness and during his convalescence.

From the first appearance of the murmur I pursued the alkaline treatment steadily and continuously, giving a drachm of nitrate of potash and six drachms of bicarbonate of soda daily for many weeks.

Ultimately the murmur entirely disappeared; and on the patient's death long afterwards, of a different disease, I had the satisfaction of learning that the heart was found to be perfectly healthy.

*From* DR. JOHN HUGHES, Physician to Mater Misericordiæ Hospital.

I have caused a list of the cases of rheumatic fever admitted into the Mater Misericordiæ Hospital under my care within the last three years to be made out. On referring to it I find 27 males and 19 females were under my care.

With 3 exceptions (one girl, aged 15, and two boys, aged 11 and 13 respectively) all were beyond the age of puberty.

38 were cases of acute rheumatic fever.

5 subacute.

3 were cases of relapse.

The great majority were admitted during the primary attack,

and some few during the second or even third attack, and with well-marked symptoms of cardiac disease. But in *no instance did cardiac symptoms occur during treatment in the hospital.*

All recovered from the fever; and the period of sojourn in hospital varied from 5 to 38 days, the average of each patient's stay being about 15 days.

The immunity those patients (who were admitted during their primary attack) enjoyed from cardiac complication I attribute more to their mature age than to any other circumstance, for I have very rarely known a rheumatic patient under the age of puberty escape from heart disease, no matter what treatment was adopted; and I have known the symptoms and physical signs of endocarditis to have *preceded* the affection of the joints in young persons. My treatment has invariably been the quino-alkaline, with blisters to the joints to relieve pain, and a fair amount of nutritious diet; very rarely stimulants—opium combined with the mixture in small doses, or as a sedative at night to procure sleep.

I think the treatment I have pursued, as stated, tended materially to mitigate the severity of the disease, to allay pain, and render the convalescence short; and I should be sorry to omit it in any case entrusted to my care, or change it for any other proposed as yet.

CASES of RHEUMATIC FEVER under Dr. Hughes during years 1865, '66, '67, and '68.

| NAME | Age | Admission | A.D. | Discharge | A.D. | No. of Days in Hospital | Result | |
|---|---|---|---|---|---|---|---|---|
| Mary Leonard, - | 50 | April 7 | 65 | April 24 | 65 | 17 | Cured | |
| Catherine Gelmor, - | 15 | Nov. 7 | ,, | Jan. 15 | 66 | 69 | ,, | Kept in hos- |
| Mary Henry, - | 40 | ,, 15 | ,, | Dec. 22 | 65 | 37 | ,, | pital after |
| James Niells, - | 25 | ,, 16 | ,, | Nov. 27 | ,, | 11 | ,, | recovery — |
| Michael Doyle, - | 25 | ,, 21 | ,, | ,, 26 | ,, | 5 | ,, | period not |
| Michael Hyland, - | 21 | ,, 27 | ,, | Dec. 20 | ,, | 23 | ,, | ascertained. |
| Patrick Cranny, - | 36 | Mar. 5 | 66 | Mar. 22 | 66 | 17 | ,, | |
| Michael M'Donnell, | 52 | April 11 | ,, | April 24 | ,, | 13 | ,, | |
| Eliza Byrne, - | 24 | ,, 13 | ,, | ,, 13 | ,, | 18 | ,, | |
| Patrick Calavan, - | 34 | ,, 23 | ,, | May 1 | ,, | 8 | ,, | |
| Philip M'Ardle, - | 44 | July 4 | ,, | July 30 | ,, | 26 | ,, | |
| Catherine Carroll, - | 45 | ,, 16 | ,, | ,, 23 | ,, | 7 | ,, | |
| Anne Horan, - | 40 | ,, 17 | ,, | ,, 23 | ,, | 6 | ,, | |
| Margaret Tool, - | 16 | ,, 23 | ,, | Aug 30 | ,, | 38 | ,, | |
| John Hayden, - | 17 | Nov. 19 | ,, | Dec. 2 | ,, | 13 | ,, | Sub-acute. |
| Thompson Neill, - | 33 | ,, 22 | ,, | ,, 22 | ,, | 30 | ,, | |
| John Cunningham, - | 28 | ,, 23 | ,, | Nov. 27 | ,, | 4 | ,, | Relapse. |
| Mary Breen, - | 50 | ,, 30 | ,, | Dec. 5 | ,, | 5 | ,, | Sub-acute, |
| Brian Hynes, - | 25 | Dec. 5 | ,, | ,, 25 | ,, | 20 | ,, | |
| John Hayden, - | 17 | ,, 5 | ,, | ,, 19 | ,, | 14 | ,, | Relapse. |
| Catherine Dowd, - | 14 | ,, 13 | ,, | , 26 | ,, | 13 | ,, | |

CASES of RHEUMATIC FEVER—*Continued.*

| NAME. | Age | Admission | A.D. | Discharge | A.D. | No. of Days in Hospital | Result | |
|---|---|---|---|---|---|---|---|---|
| Robert Fitzgerald, - | 23 | Dec. 21 | 66 | Dec. 28 | 66 | 7 | Cured | |
| Bryan Hynes, - | 25 | ,, 31 | ,, | Jan. 27 | 67 | 17 | ,, | Relapse. |
| Joseph Turner, - | 13 | Feb. 11 | 67 | Feb. 24 | ,, | 13 | ,, | |
| Mary Kelly, - | 22 | ,, 19 | ,, | Mar. 15 | ,, | 24 | ,, | Sub-acute. |
| Patrick M'Garry, - | 23 | Mar. 13 | ,, | ,, 25 | ,, | 12 | ,, | Sub-acute. |
| Patrick Hughes, - | 23 | April 1 | ,, | May 1 | ,, | 30 | ,, | |
| Michael Pigot, - | 36 | ,, 11 | ,, | April 21 | ,, | 10 | ,, | |
| Mary M'Gowan, - | 64 | ,, 11 | ,, | ,, 27 | ,, | 16 | ,, | |
| Nora Seery, - | 19 | ,, 13 | ,, | ,, 19 | ,, | 6 | ,, | |
| Patrick M'Garry, - | 22 | ,, 22 | ,, | ,, 30 | ,, | 8 | ,, | Sub-acute. |
| Mary Mooney, - | 22 | ,, 29 | ,, | May 11 | ,, | 12 | ,, | |
| Anne Fannon, - | 27 | May 15 | ,, | ,, 27 | ,, | 12 | ,, | |
| Eliza Murphy, - | 17 | July 23 | ,, | Aug. 5 | ,, | 13 | ,, | |
| Mary Owen, - | 17 | Nov. 16 | ,, | Nov. 21 | ,, | 5 | ,, | |
| Laurence Geoghegan | 40 | Feb. 10 | 68 | Mar. 5 | 68 | 24 | ,, | |
| John Lynch, - | 38 | Mar. 23 | ,, | ,, 25 | ,, | 33 | ,, | |
| James Levin, - | 27 | April 20 | ,, | April 30 | ,, | 10 | ,, | |
| Eliza Westlake, - | 27 | ,, 23 | ,, | May 9 | ,, | 16 | ,, | |
| George Carty, - | 18 | May 22 | ,, | ,, 29 | ,, | 7 | ,, | |
| George Ryan, - | 11 | ,, 29 | ,, | June 8 | ,, | 10 | ,, | |
| John Long, - | 26 | June 3 | ,, | ,, 19 | ,, | 16 | ,, | |
| Michael Brophy, - | 25 | July 30 | ,, | Aug. 14 | ,, | 15 | ,, | |
| Ellen Carroll, - | 40 | Nov. 13 | ,, | Dec. 7 | ,, | 24 | ,, | |
| Catherine Long, - | 52 | Dec. 9 | ,, | Jan. 9 | ,, | 31 | ,, | |
| John Busmit, - | 24 | Mar. 1 | 69 | Mar. 9 | ,, | 9 | ,, | |

*From* HENRY KENNEDY, M.B. Dub.; F.K. & Q.C.P.; Physician to Sir P. Dun's Hospital, and to Cork-street Fever Hospital.

For some years past I have had the greatest confidence in what is known as the alkaline treatment laid down by Drs. Garrod and Fuller for acute rheumatic fever. Unless I disbelieve my senses I cannot doubt its great value in shortening the duration of this disease, for I recollect well when six and eight weeks were the common periods for a patient to be in hospital when labouring under this affection. Now, unless some complication arise, such as pericarditis, and this is, of course, exceptional, three weeks is about the time—that is, reckoning from the day the patient was submitted to the treatment. I have seen so many instances where patients have remained at home for ten to fourteen days, and yet no amendment had occurred, though they were necessarily confined to bed, that I cannot doubt the opinions lately advanced in London are erroneous, unless, indeed, we suppose the disease met in that city is different from

what it is in Dublin, and this it is hard to do. Whilst, however, I thus speak in favour of the alkaline treatment, I do not limit myself entirely to it. In by far the majority of cases the disease is attended by very severe suffering. Hence I have been in the habit of joining the anodyne to the alkaline treatment, and, I believe, with the best results. The former plan has been long known and acted on, but I am not sure that I have read in any work of the combination of the two plans, which appears to me, at least with our present knowledge, the best which can be adopted. In these remarks I have purposely omitted what may be called the minor points of treatment.

*From* ROBERT LAW, M.D.; Professor of the Institutes of Medicine in the School of Physic; Physician to Sir P. Dun's Hospital.

Professor Law's opinion, as expressed in the following extract from a paper published by him in this Journal in May, 1864, remains quite unchanged by later experience:—

"In conclusion, I would recapitulate the treatment I have pursued in acute rheumatism, as consisting in a moderate venesection, almost never exceeding eight ounces, and seldom requiring to be repeated; and in the exhibition of colchicum, either in the form of the tincture or the wine of the seeds, of which preparation I do not exceed a drachm in a six-ounce mixture, or the acetous extract in grain doses three or four times daily. When I consider it necessary to exhibit an aperient, which I avoid as much as possible in such cases, from the pain of the motion consequent upon the operation of the medicine, I direct the following mixture:— Tincture of the seeds of colchicum, one drachm; tincture of senna, half an ounce; sulphate of magnesia, six drachms; peppermint water to six ounces. I have found considerable advantage and ease to the patient from combining opium largely with the colchicum. I have already alluded to the fact of how very unsusceptible of the influence of opium persons affected with acute rheumatism are; it is quite remarkable what an amount of it they will bear without being narcotized. I constantly direct a drachm of the tincture of the seeds of colchicum, and a drachm of liquor opii sedativus, in a six-ounce mixture; or a grain of the acetous extract of colchicum and a grain of the watery extract of opium in a pill, three times, or oftener, in the day. Thus have I combined Dr. Corrigan's narcotic treatment of the disease with my own. The local application to the inflamed joints which I have employed with most advantage is the tincture of iodine, and especially where there is effusion into the joints, which, in most cases, disappears speedily under

its use. I have generally observed, where the pericardium or endo-
cardium is about to be affected, there is, in general, previously an excited
action of the organ, in which case I add digitalis either to the mixture
or pill. And when an attrition murmur, or a valvular abnormal sound,
indicates pericarditis, or endocarditis, I then combine mercury with the
other medicines in the following formula :—Acetous extract of colchicum,
four grains ; calomel, three grains ; watery extract of opium, two
grains ; powdered digitalis, one grain. To be made into four pills ;
one to be taken every third hour. I also direct a blister to be applied to
the precordial region, and the blistered surface to be dressed with mer-
curial ointment, in order to bring the system speedily under the
influence of this medicine—convinced as I am of its power to effect the
absorption of the effused lymph, whether deposited on the pericardium ; or
on the surface, or in the substance, whether superficially or interstitially
in the valves. This is the stage of the disease when medicine can alone
cure it.

"To return to our treatment of rheumatism. When the acute
symptoms have passed away, and all fever gone, we now conclude our
treatment with bark and hydriodate of potash, or quinine ; and when
stiffness of joints alone remains, with warm baths. We have ever
found that, as long as the disease retains any of its acute character, so
long will no benefit be derived from the warm bath ; but so far from it
the patient generally complains that his pains had been much worse.
So that in doubtful cases the effects of the warm bath have served me as
as a test of the disease as to its having passed from the acute to the
chronic stage.

"We have already observed we gave a fair trial to every other mode
of treating the disease, viz., the alkaline treatment, the citric acid treat·
ment, the treatment with opium freely exhibited, the treatment with
colchicum alone, and the treatment with bark with hydriodate of potash,
and none has approached the plan we have recommended in the shortness
of time it required, nor has any been more certain in its results. And
time and ample experience have established its pretensions with us."

*From* Robert D. Lyons, M.B. Dub.; Physician Richmond,
　　Whitworth, and Hardwicke Hospitals; Professor of Medicine
　　and Pathology Catholic University.

Dr. Lyons has had a large experience in the treatment of
rheumatic fever for some years past in his clinique at Jervis-street
Hospital, and subsequently in the Hospitals of the House of
Industry. In both hospital and private cases he has, as we are
informed, given trial to all the principal plans of treatment which
have had any authority to recommend them, and as the result of

observations conducted with care he has come to the mature conviction, that with certain adjuncts in the way of clinical manipulation of the affected joints, the alkaline plan of treatment offers advantages in which it is not approached by any other method of dealing with the malady. Dr. Lyons has, in fact, adopted for some five years past a settled mode of treatment of rheumatic fever, the details and principles of which may be thus briefly summarized:—

The patient is placed in a flannel jacket, and between blankets, the sheets being removed from his bed. The joints affected are assiduously poulticed with a mash of camomile flowers and poppy heads, reduced to a soft state by being simmered for from one to two hours. These poultices are removed and replaced by fresh ones at intervals of three or four hours, and thus this soothing application is kept up " hot and hot," so long as pain and swelling continue to be complained of, and so marked and immediate is the relief thus afforded that the patients will be found frequently to ask urgently for a fresh poultice to a joint which is becoming affected. To procure sleep, and to ease and tranquillize the patient in this very painful malady, from one quarter to half a grain, or even a grain dose of opium is given every third, fourth, or sixth hour, according to the age of the patient, and the distress and urgency of the symptoms.

The following alkaline mixture is next prescribed, the proportions and the vehicle of exhibition for which are altered according to the state of the patient's stomach. In eight ounces of the infusion of gentian, cascarilla, or any of the light bitters, half an ounce of the bicarbonate, two drachms of the acetate, and two drachms of the nitrate of potash, are ordered with half an ounce of any ordinary flavoring syrup. Of this mixture one table-spoonful is administered every third hour, except when the patient is asleep.

The diet is restricted to milk and any simple farinaceous food; and for drink, soda or kali water, or lithia waters in effervesence are allowed *ad libitum.*

Dr. Lyons' standing orders to the clinical clerks are, to examine and record the state of the heart and its membranes on the patient's admission. When, should cardiac complication exist, or should it be subsequently developed, *which rarely happens,* when this plan of treatment has been put in operation sufficiently early, relays of leeches and poultices are placed over the heart; but mercury is not

now exhibited in Dr. Lyons' practice, except in the most rare and exceptional instances.

When as occasionally, though in his experience but very uncommonly, it may happen that through squeamishness of stomach the alkaline mixture just described is not well borne, Dr. Lyons has recourse to the salts of lithia, given in distilled water with a little of the syrup of orange flowers.

The bowels are regulated by enemata, or a mild rhubarb aperient, with magnesia ustä; but under no circumstances is the patient allowed to get out of bed, and he is at all times supplied with an urinal.

Tepid sponging, and the frequent use of dry warm (Turkish) towels are found to give great relief when the sweat is excessive. It has not been found necessary, in Dr. Lyons' experience, to leech or blister the joints, and to this latter procedure he avows an open and uncompromising hostility.

For this plan of treatment, as above detailed, and which has been pursued more persistently by Dr. Lyons than perhaps by any other of our Irish hospital physicians, he claims no originality whatever, but he avers the following conclusions in its favour:—

1. It gives immediate ease by the local applications, and the internal employment of narcotics. The patient thus passes with a minimum of suffering through an otherwise extremely painful disease, and often after the first day or two the patient complains of absolutely no pain or distress whatever.

2. The local application of heat, moisture, and narcotics relax the fibrous textures invaded by the *materies morbi*, urate of soda, or whatever other pathological product it may be, while the said *materies morbi* is not repelled from external parts, where, though the cause of pain, it is rarely if ever capable of producing ultimate serious organic mischief, as it will surely tend to do, if driven upon internal organs.

3. The alkali thrown liberally into the system, affords, when circulated in the blood, a ready solvent for the urate, while the action of the nitrate and the acetate of potash promotes free elimination through the safest channel of exit from the body, that of the urinary excretion.

4. This plan of treatment, when fully and carefully carried out, diminishes the duration of the disease, and, in Dr. Lyons' opinion, lessens in a very high degree the liability to cardiac complication. So much is this the case that in but an exceed-

ingly rare number of instances has it happened that a patient admitted without cardiac complication has developed it subsequently in Dr. Lyons' clinique. Furthermore, his experience has shown him that in instances in which cardiac murmur was present on admission of the patient the persistent employment of the alkaline plan with the adjuncts above detailed has had the result of removing the cause of the murmur, possibly in such instances constituted by limited deposits on valves not otherwise damaged.

With the experience of five years in hospital and in private cases, and with, as he avers, the happiest results as to diminution of suffering, shortening of the duration of the malady, an undeniable lessening of the tendency to cardiac complication, Dr. Lyons avows himself a warm advocate of the alkaline and narcotic plan of treatment above detailed. His results of treatment have before now been brought to the notice of the profession, and have been witnessed by many visitors to his clinique.

*From* WILLIAM MOORE, M.D., Dub. King's Professor of the Practice of Medicine; Professor of Clinical Medicine Sir P. Dun's Hospital.

With respect to the treatment of " Acute Rheumatism" Dr. Moore cannot fall in with the " do-nothing" system. He is an advocate for the alkaline treatment, and after having given those in use, individually, repeated trials, he is disposed to place most reliance on the acetate or bicarbonate of potash, especially the latter, in doses varying from half a drachm to one drachm every fourth hour; having first relieved the chylopoietic viscera by a mercurial purgative. He has found this treatment, combined with an opiate at bed time, *fluid* diet, and keeping up a general high temperature, particularly over the affected joints (which is best done by wrapping them in raw cotton covered with oiled silk), very satisfactory.

Dr. Moore states that although not armed with statistics, his experience leads him to conclude that where the above treatment is steadily carried out, not only is the duration of the disease shortened, but endo and pericardial complications are of less frequent occurrence.

*From* DENIS C. O'CONNOR, M.B., Professor of Practice of Physic Queen's College, Cork, and Physician to Mercy Hospital.

We may divide cases of rheumatism into three classes—First, those occurring in persons of feeble health or weak constitution, in which

may be included the majority of females; children and young persons in the period of growth, no matter how robust they may appear; second, those who were in strong health and of a robust constitution at the time of seizure; a third form may be found, in those who, originally plethoric, have become weakened by protracted diseases. In all cases I give for the first few days as much of a mercurial as may be administered, without affecting the gums or weakening the patient's strength. In the first class, I give nutriment and diaphoretics, and after a few days large doses of quinine and an occasional sedative at night combined with colchicum. In this and the third-class I take special care to adopt no treatment which could give a shock to the system, and perhaps weaken the too feeble determination to the cutaneous surface. Such cases I had to treat in large numbers while I was physician to the workhouse. For the same reason that I am induced to give tonics, stimulants, and nutriment to the feeble to assist the eliminative process which nature is carrying forward, I am disposed to adopt a lowering treatment in the plethoric to pre-vent secondary complications, by congestions in various organs, which at the same time would promote instead of diminishing the action of the cutaneous exhalants, so necessary a part of the cure in these cases. Every practical physician knows the details of the treatment necessary for attainig this object. In all cases I give more or less of the alkaline carbonate but not in such quantities as recommended by Dr. Fuller, nor have I ever been able to bring myself to rely on them altogether. The statements I have seen as to pericarditis occurring in every fifth case, does not correspond with my experience. This form of heart disease is much more rare than here stated, and more rare than endocarditis, with reference to which I suspect we are liable to error especially in hospital practice. Although I never fail to examine the sounds of the heart daily in acute rheumatism, still I have dismissed from hospital as cured persons whom I met in months perhaps years afterwards, suffering from valvular heart disease. When investigating the previous history of persons affected with chronic valvular disease, I find that almost invariably they refer to some previous attack of rheumatism, but never say they were treated for or cautioned about heart disease. From these facts I infer that a very slight form of inflammation, attended with little constitutional dis-turbance, and a very slight exudation may supervene at the termination of rheumatism, and the spoiling of the valves be

only of slow subsequent growth. The last case which I had under my care was that of a young lad, about fourteen years of age, who had been three weeks going out before any symptom of heart affection manifested itself after a prolonged walk into the country. My experience leads me to say that both rheumatism and (consequently) heart affection are most prevalent in the young. But watching other cases for many years I can bear testimony to a perfect cure, in many instances, which I think never occurs to persons affected at a latter period of life.

*From* JOHN POPHAM, M.B., Physician Cork North Infirmary.

1. *General and Local Bleeding.*—My treatment in this respect has become greatly modified since I commenced practice, some quarter of a century ago. At that time I used to meet cases of a high sthenic type, which sustained depletion very well, and were treated generally at the outset of the disease by one, or at farthest, two, full bleedings, certainly with visible benefit. The cases were then brought to a successful termination by the use of colchicum and magnesia, with or without saline aperients. My recollections of those cases are very favourable, and cardiac lesions did not seem more frequent; indeed, in my opinion less frequent, than at the present day. I must, however, make an exception as regards cases treated by frequently repeated venesections, some of which I saw in foreign hospitals, and which impressed me with the conviction of the *nimia medici diligentia*, from the tardy convalescence, and the frequent complication with heart disease. For many years I have not bled in acute rheumatism, nor have I in truth seen cases in which I thought it indispensable, but I do not mean to say that it is a practice which ought absolutely to be removed from the therapeutics of this disease. Bearing in memory my former experience, I can only explain the difference in the present day of the treatment by a change of type in the disease. I seldom employ local bleeding in the pains and swelling of the joints, as I have thought it tended to produce cardiac determination, but when this organ became seriously involved I always found local bleeding beneficial.

2. *Mercury.*—I have never been an advocate for mercury in this disease, when carried out with a view to its specific effect. In the acute stages it is difficult to salivate patients, the medicine seeming to remain latent, but when the fever becomes abated, then salivation is apt to set in with sudden force and protract the recovery, an

occurrence very undesirable at the close of an ailment which draws so severely upon the strength. As an occasional alteration this medicine is of value. But when the disease is in a kind of transition stage, the poison seeming in a state of uncertainty where it may fasten, mercury seems unserviceable, and augmentative of the roving instability of the tonic agent. It is, however, quite a different thing when the disease fixes itself, either in the heart, or some other vital organ. Then we can only depend with safety on local depletion, and calomel and opium should be rapidly administered, making at the same time an effort to relieve the internal mischief by sedulous counter-irritation to the distant joints. I am aware that this treatment is opposed to the opinions of some judicious physicians, but as yet I have not seen sufficient reason to change these views.

3. *Alkalies.*—I have of late years depended very much on these medicines, and my conviction of their value is every day becoming more corroborated by experience. I think, however, that they require to be used with judicious caution, every case not being suitable for them. As a rule I believe that their value is almost in a direct ratio with the sthenic nature of the disease. The higher the fever, the stronger the pulse, the severer the local pains, the deeper the acidity of the secretions, the more serviceable we shall generally find the alkaline treatment.

4. *Nitrate of Potash.*—I have seen numerous rapid recoveries from this medicine used in moderate doses, such as one or two drachms per day; given in larger doses it does not seem to agree so well. There are, however, many cases which resist its effects, and the inference seems borne out that if its good effects be not soon perceptible, it is better not to persist in its use.

5. *Lemon Juice.*—I have witnessed some very rapid cures from the use of this agent, and in other instances, it has failed to produce a durable effect, so that I regard it as uncertain. It seems of more benefit in the more asthenic than the sthenic cases, and in the more apyretic than the pyretic cases. It suits, therefore, examples of a low type, and feeble constitution, where there is not much local swelling, but rather darting, flying pains. I am, however, still undecided about its degree of merit. It is necessary in such instances as those assigned, to supplement its use with good beef-tea and plenty of it.

6. *Opiates.*—I never trust the treatment of acute rheumatism to opiates per se, though, as auxiliaries, we can hardly estimate their

value too highly. Exhibited at bed-time in large doses, they are beneficial both as sedatives of pain, and as enabling the constitution to tide over safely the period of early morning when the disease shows its most restless phases. I have reason to speak with confidence of their value in combination with alkalies, or nitrate of potash. For instance, 3 to 5 grains of Dover's Powder with 15 grains or a scruple of bicarbonate of potash, or 20 grains of nitre, given from 4 to 6 times per day have, by meeting a double object, promptly cured the disease.

7. *The Let-Alone System.*—I have not much experience of this method, but such as I have is not favourable to it. Most physicians meet with cases which have been left to themselves and terminated in the chronic state of the ailment. In taking the duration of a case solely as a test we are apt to make mistakes, and a broad margin should be left for those various changes which disturb and complicate statistics.

*From* WILLIAM STOKES, M.D., D.C.L. Oxon.; Regius Professor of Physic in the University of Dublin; Physician to the Meath Hospital.

I do not know of any disease that more unmistakeably shows the change of type than rheumatic fever. It was a very different disease thirty or thirty-five years ago than what it is now. It was marked by a high inflammatory fever, a burning skin, a bounding and resisting pulse, " inviting the lancet," strong action of the heart, intense local irritation, and extreme pain. Our practice never was bleeding on the *coup sur coup* system of Bouillaud, but we found that one bleeding in the early periods was well borne, and that patients so treated made better and more speedy convalescences than those who were not bled. The blood was always buffed and cupped in a high degree. Local bleeding by leeches was practised, following the arthritis from joint to joint with a moderate number of leeches. When the internal organs were attacked the inflammation was most acute. We have had nothing like it for years.

The whole character of rheumatic fever in Dublin for many years has been changed, and, as regards the constitutional and the local symptoms, it is mainly of an asthenic type. Some of the cases, at an early period, have a tendency to pyemia. They show purulent sudamina, feebleness of circulation, bed sores, and commonly exhibit various forms of anemic murmur in the heart and arteries

in the advanced stages. The convalescence is slow and unsatis-
factory, and in many of them, even with pericarditis, such was the
debility of the heart, that wine had to be used with freedom. It
often removed the irregularity of the pulse.

I have long disbelieved in the efficacy of any of the proposed
specific treatments for acute rheumatism or rheumatic fever,
including mercury, opium in large doses, bark, colchicum, alkalies,
and acids. The disease, like continued fever, will run its course,
and the principles of treatment are the same in both cases. We
are to support the strength and alleviate pain, and employ tonics
in the advanced stages.

Some of the most protracted convalescences I have ever seen
were in cases in which, as was the practice long ago, the patients
were, at an early period, brought under the influence of mercury. I
conceive that Dr. Gull and his colleague have done good service to
practical medicine in bringing forward observations on this subject.

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# REPORT ON OBSTETRIC MEDICINE AND SURGERY.

By GEORGE H. KIDD, F.R.C.S.I.; Obstetric Surgeon to the
Coombe Lying-in Hospital; Hon. Sec. Obstetrical Society of
Ireland.

## TEDIOUS AND DIFFICULT LABOUR.

THERE is no problem in practical midwifery of more importance,
or, perhaps, of such importance, as to know when to interfere and
afford assistance in cases of tedious labour. The often-repeated
maxim, that " meddlesome midwifery is bad," and that " the powers
of nature should be trusted," have now happily lost their hold over
practitioners, and it has become the rule to afford early assistance
rather than encounter the dangers of delay. But while it is agreed
that the onset of the dangerous symptoms described by authors
under the terms " powerless labour." " exhaustion," " cessation of
labour pains," &c., &c., should not be waited for, it is incumbent
on us not to expose either mother or child to the risk of operative
interference without necessity, and the problem to be solved in
each case is, at what period does the necessity arise?

An observation of Dr. J. Braxton Hicks[a] will afford great

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[a] On the condition of the uterus in obstructed labour, and an inquiry as to what is
intended by the terms, " exhaustion of labour pains," " powerless labour," and
"exhaustion." By J. Braxton Hicks, M.D., F.R.S., &c.; Trans. Obstet. Soc. of
London. Vol. ix., p. 207.

assistance in determining this problem. Dr. Hicks finds that in the course of a tedious labour the pains may cease under two conditions, which must be discriminated for the determination of the proper mode of treatment.

The first of these conditions is a state of quiescence, in which the uterus is simply resting quietly. During it the pulse is not raised, and there are no untoward symptoms beyond languor, and possibly faintness. After a time the labour pains return, and delivery may be accomplished naturally, and with safety to both mother and child.

The second condition is one of continuous action, and by whatever cause the labour be obstructed, whether by contractions, &c., of the softer, or of the bony parts, or by the irregular spasmodic action of the uterus itself, sooner or later the rhythmical pains merge into this continuous action till it alone remains. This condition Dr. Hicks believes to be the precursor to the symptoms of " powerless labour," " exhaustion," &c., and as soon as it commences, those symptoms gradually follow which have been held as indicative of the necessity for artificial delivery, such as the rise of the pulse, dry tongue, hot skin, &c.; and in those cases where, after hard labour, these symptoms have occurred the uterus will be found in a state of permanent action, with the rare exception of those where the uterus was ruptured, or violent mental emotion has subjugated its power. This continuous action persists to the very verge of dissolution. In one case of arm presentation, where labour had lasted a week, and three attempts to turn had been made, the patient, when Dr. Hicks saw her, being scarcely able to articulate, and having her tongue very brown, and pulse 150, no change from the excessive rigidity took place, even under the influence of chloroform, till a few moments before death. So hard was the uterus in all its parts that it bore no resemblance to living contracting tissues. In this state Dr. Hicks believes the uterus becomes gradually irritated, and continuous action is set up so that though the pains may seem to have ceased, and may only occur at irregular intervals, it is really more active than before, tightly compressing the child, and falling into the inequalities of its form, whereby the child is prevented from escaping, every indentation of the uterus forming, as it were, a ledge past which it is difficult to draw it, or to pass the hand if we desire to turn. Once this condition is established it is rare that the rhythmical pains ever occur with such force as to expel the child, and sooner or later interference becomes necessary.

To distinguish these two conditions of quiescence and continuous action it is seldom necessary to do more than examine the state of the uterus through the abdominal parietes; but occasionally it may be necessary to pass the hand within, past the presenting part. In the first case the uterine walls are lax and flabby, and the fetus is readily detected within, floating about with ease. In the other the uterus is hard and firm, and tightly moulded to the fetus, which cannot be swayed about. This want of mobility of the fetus is a distinguishing sign of the contracted state of the uterus. It occasionally happens that the fetus, especially when dead, is rolled up into a globular form, having lost the ovoid. Percussion affords another sign. If the uterus be contracted there will be resonance up to the margin of the hard body. If it be lax, the dulness will extend beyond the edge of the hard body.

Dr. Hicks attributes this contracted state to exhaustion of the nervous power rather than to direct pressure on the soft parts of the mother, and he makes the following observations as to the treatment to be adopted, both when the uterus is relaxed and when it is contracted:—

" A proper consideration of these two forms of deficiency of the rhythmical uterine action enables us to decide upon the proper mode of treatment with great distinctness, and it will materially help us also to do so at an early period, earlier, indeed, than generally has been held possible.

" If it is true, as already stated, that when the clamping continuous action of the uterus has once begun, there is very rarely any hope that the rhythmical expulsive pains will again preponderate to such an extent as to expel the fœtus at least unaided; and as we know that the action of the ergot of rye is to cause this very action, if it fail to cause expulsive pains, and to increase it when present, it is clear that the administration of this drug should be avoided in this state of affairs. I am not prepared to affirm that it may not, in some few cases, again rouse the expulsive pains sufficiently to expel the fœtus, but its use must under the circumstances be attended with a degree of risk such as it seems very undesirable to incur.

" But if there be this objection to the use of secale and other uterine stimuli, there is, on the other hand, a clear and distinct indication in favour of operative interference; the mode in which it is carried out of course depending on the nature of the case, but that which is accomplished by means of traction would suggest itself as being the best, inasmuch as it would enable the fœtus to pass through the uterine grasp, and to distend the contracted portions.

" An example of this class of cases is not infrequently found in a primipara, in whom notwithstanding uterine pains have continued for a long time, no progress has been made. On examination it will be found that although the head of the child have escaped the os uteri, the shoulders are caught either by the os uteri itself, or by a contraction a little way above it. When the detention has continued a certain time, the rhythmical pains gradually merge into the continuous form, and then it is very rarely that the fœtus is naturally expelled, particularly so if, secale having been given, it has failed to extrude it. Then, unless timely assistance be given, the fœtal life is extinguished, symptoms of irritation, then of exhaustion come on, followed by putrid decomposition of the fœtus, and the patient sooner or later succumbs. Thus a comparatively small obstruction occurring, delivery by natural powers is made nearly impossible by the grasping uterine contraction. It matters not, however, in what part of the parturient passage the hindrance is situated, its position only affects the period and rapidity of the occurrence of the serious symptoms.

There is no doubt but that in some cases where the case is taken early, the continuous action yields to the influence of chloroform, but inasmuch as this remedy also, in a certain degree, diminishes the expulsive pains, it is by no means certain that its use will be succeeded by progress; on the contrary, it may be said that, with the exception of contracted states of the os uteri, the cases are rare in which expulsion of the child would occur after its use in the circumstances just narrated.

" From a consideration of the above circumstances we may deduce the following as our rule both as to the time and the mode of our rendering assistance,[a] namely :—

" If, on placing the hand on the uterus externally we find it firmly contracted around the fœtus between the pains (the observation of this point being made over a sufficient period); or if there being no pains we watch for some time and find no relaxation, we may be nearly certain that further waiting will effect no good; and therefore, in other words, it is worse than useless to postpone assistance any longer, and this rule will be still more distinct if we find the pulse rising, the countenance anxious, and much distress felt in the uterus.

" If on the contrary we find the uterus lax, then we may safely wait as long as the pulse be quiet; to this, perhaps, an exception may be taken, where in certain cases the head may be firmly impacted in the cavity of pelvis by the pains which preceded the state of relaxation. In such case we might wait safely if we could push back the head a slight

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[a] It is by no means here intended to be implied that the forceps are not to be applied in cases where no continuous action has occurred; it is only meant that when it has occurred our line of practice is quite clear; neither is it affirmed that we are to wait always till the continuous action has begun.

degree so as to remove the persistent pressure on the maternal soft parts, being of course ready to employ artificial aid if the recurring pains were not sufficient ; otherwise, if much time elapse, it will be necessary to interfere to rouse the pains or draw the head through.

" Should the pulse rise, or vary much, or other general symptoms arise when the uterus is relaxed for some time, it is more than probable that some lesion has occurred, or some unusual condition has interfered, such as an attack of an exanthem, pneumonia, &c., for the cases are rare indeed in which " powerless labour" in Dr. Churchill's sense is present without the condition of continuous contraction having preceded it, if we except that state which is induced by violent mental emotions or rupture.

" It has been given as a rule by some authors that abstraction of the child should not be done unless there are pains present to assist the withdrawal of the child, secure the expulsion of placenta, and keep the uterus well contracted after. To a certain extent this is a safe rule, but it is one which is indefinite, because the ' pains ' may be absent, and yet the uterus very active, over-active indeed, as has already been pointed out, and even if it be not, yet it is found that when the head is drawn down the uterus does contract after.

" What are the explanations for these facts ?

" Where there is the continuous action we may safely draw down the fœtus with proper rapidity without fear. The uterus contracts firmly on the receding contents, and even sometimes the rhythmical pains again are re-excited, and the placenta is expelled naturally, the uterus remaining well contracted afterwards. Sometimes the uterus continues so firmly contracted after the withdrawal of the fœtus, that the placenta is held as firmly in its grasp as the fœtus was, so that it has to be removed by artificial aid.

" But where the uterine walls are relaxed, it doubtless is the best plan to endeavour to rouse the uterine action by oxytoxics, such as secale, &c., but it not infrequently happens that when the head is drawn down to the outlet reflex action is excited so much as sometimes to assist materially in the expulsion of the fœtus, and to secure the expulsion of the placenta and uterine contraction after. Yet the removal of the child under these circumstaeces is attended by some risk of hemorrhage, especially if the child be extracted too rapidly ; and if the uterus does not respond quickly to the fresh irritation. It would be best in these cases to give a trial of secale first of all, and if then no action ensue, the head may be slowly delivered, and the remainder of the body allowed to remain for a time in the passages to stir up the uterine activity, while, in the meantime, we employ the various other means known to be capable of rousing expulsive pains ; and this would be the rule in those cases where there is clearly such an obstacle to the birth of the child as in any

case would demand traction, but where the pains had subsided and the uterine walls were lax.

" Thus we may briefly say that, in both cases of absence of the pains, we may do well (with due care) to use extraction. That *extraction* is peculiarly required in the cases where *continuous action* has supervened, while secale is detrimental ; but that *secale* and uterine stimuli are of great service where the uterus is *relaxed;* while extraction (if adopted) should be employed with slowness and caution.

" It is proper to state that it is not intended to be said above that a contracted state of the lower segment of the uterus as revealed to the hand passed internally, necessarily implies a generally contracted condition, because the fundus might be coincidently relaxed, and if extraction were made suddenly, hemorrhage might occur above the constriction from the relaxed upper portion.

" The following is a *résumé* of the principal points desired tobe established in the foregoing paper :—

" 1. That it is very rare to find symptoms of ' Powerless Labour ' (Churchill) where the uterus is relaxed.

" 2. That where serious symptoms have begun, and at the same time the pains have apparently ceased, it will almost invariably be found that the uterus is in a state of continuous action.

" 3. That the continuous action is the cause of the symptoms of ' powerless labour.'

" 4. That the time at which these symptoms arise varies considerably according to peculiarity of the patient, the violence of the action, and the position and presentation of the child.

" 5. That if this constant contraction be fully established it is better to deliver the child artificially, unless we first try the effect of choloroform.

" 6. That the effect of the continuous action is exhausting to the mother, and liable to be fatal to the child.

" 7. That the use of secale is contra-indicated in such cases.

" 8. Where the uterus is lax we can generally wait a considerable time without danger to the patient or to the child. When the uterus has been allowed time to recover its nerve force, then it is advisable to give some oxytoxic, as secale, &c. If this fail, we may then draw down the head to the vulva slowly and cautiously, which will probably induce uterine action. The removal of the child must be done cautiously, and only as we find the uterus to respond."

There can be but few practitioners of midwifery to whom these two conditions are not well known, but to Dr. Hicks must be ascribed the merit of having clearly and definitely interpreted them, and shown their value in determining the time and mode of

interference. But the question remains whether it is even wise to wait for the beginning of this state of continuous action—whether in a case of labour, where the presenting part makes no advance for some time, notwithstanding the presence of active pains, we should not at once complete the delivery. It is quite true that in the large majority of such cases the child may be born without artificial assistance, but will not less injury be done to mother and child by the judicious use of the forceps than by the delay? This is, however, going back to the uncertain teaching of each man's judgment as to the proper time for affording aid; but however this may be decided, it must now be held as a rule of practice that in no case should further delay be permitted where the uterus has passed into this state of continuous action.

Dr. Hicks would confine the use of secale to those cases where there is a cessation of rhythmical pains with relaxation of the uterus, and if secale is to be used at all it should only be in such cases, but the uncertainty of its action, and the great probability of its killing the child when its physiological action is manifested, are objections to its use even under the circumstances described; and this is not to be regretted, seeing that in opium we have a more certain and a perfectly safe substitute, and where it fails we can complete the delivery with the forceps.

### FORCEPS.

In a course of lectures on obstetric operations, Dr. Barnes[a] sets forth very fully the merits and capabilities of the various midwifery operations. Out of his remarks on the forceps a discussion has arisen as to the terms " short" and " long" as ordinarily applied to this instrument, and as to the value of the second or pelvic curve in the blades. Dr. Barnes advocates the use of an instrument having a moderate pelvic curve, and longer in both the blades and the handles than those generally used in the Dublin Hospitals, and falls into the very common error of speaking of the " straight " or single curve forceps as " short" forceps, and confining the term " long " to an instrument having the pelvic curve, whereas the single curved forceps may be as long as any other, and some of the shortest instruments have the double curve, but in a letter published subsequently, Dr. Barnes acknowledges the inaccuracy, and suggests that the terms " long" and " short " should be discarded.

[a] Medical Times and Gazette, 1867-68-69.

Dr. Barnes objects to the straight forceps—1st. That it is more difficult of introduction, especially as regards the upper or pubic blade, requiring that " the patient's nates should be dragged over the edge of the bed ;" 2nd. That it is more liable to rupture the perineum ; 3rd. The sacral blade is extremely apt to bruise, by one of its edges, the sciatic nerve of the mother ; and 4th. It is very likely to press upon the portio dura of the child, and cause facial paralysis.

To the first and second of these objections Dr. Beatty replies in a letter published in the *Medical Times and Gazette* of the 21st September, 1867, showing that it is only necessary to put the patient in the ordinary obstetric position for the introduction of the straight instrument, and that it does not endanger the perineum. In reply to the objection made by Dr. Barnes against Dr. Beatty's own forceps, " that it is inadequate to cope with a large range of cases which come within the power of the long forceps," Dr. Beatty quotes a case of convulsions, from his recently published volume, in which he dilated an os uteri about the size of a two-shilling piece, with his fingers, sufficiently to allow him to introduce his forceps, and with it delivered the woman of a living child ; and states very justly " that an instrument capable of accomplishing such a feat does not require any further commendation."

Dr. Eastlake,[a] taking part in the same correspondence, confirms all that Dr. Beatty had said as to the ease with which his forceps could be applied, and the perfect safety, to both mother and child, with which it could be used ; and, in a second letter (October 12), draws attention to the " vast superiority" of the straight instrument over the curved for the treatment of cases where the fetal head was placed in the occipito-posterior positions, quoting a passage from Sir James Simpson's " Obstetric Memoirs " in support of his argument. In this passage Sir James, after showing the advantage of correcting the malposition of the head in these cases, says, that it is here " we see the superior advantage of employing a straight pair of short forceps." " If we employed a curved pair in this position, and tried to turn, we should be obliged either to introduce them at first or extract them at last with their concavity instead of their convexity looking backwards, and consequently with great and unnecessary risk of contusion and laceration of the soft structures of the mother, from the projecting ends and sides of the blades."

[a] Medical Times and Gazette, Sept. 28, 1869.

Dr. Barnes, indeed, alludes more than once to the use of the straight forceps for correcting malpositions of the head, and states he used it to great advantage in two cases where the head came down into the pelvis in the transverse diameter; but he does not think it advisable to make the attempt when the head is in the occipito-posterior position. If the head turn of itself he thinks it should be allowed to do so, but " it is labour lost—it is encumbering Nature with superfluous help—it is a sin against that most excellent maxim, ' *ne quid nimis*,' to attempt to promote this turn by twisting with the forceps."

Dr. Barnes does not, however, show how the objection raised to curved blades by Sir James Simpson is to be overcome, when this turn takes place spontaneously with the curved forceps applied to the head, and it is obvious that the curve of the blades must afford an obstacle to the accomplishment of the turn, which is admitted to be so desirable, and which the straight blades would not.

Another great advantage of the straight over the curved blades, dwelt upon by Dr. Beatty in this correspondence, is the fact, that the handle of the instrument always points in the direction in which the extracting force should be used, whereas the curved instrument gives an erroneous idea of the position of the head, and may cause the expenditure of much unavailing force in a wrong direction.

The distortion of the child's features alluded to by Dr. Barnes as caused by paralysis of the portio dura produced by the pressure of the points of the straight forceps cannot be attributed to this cause. In a paper published in this Journal in February, 1859,[a] it is shown that this is really due to paralysis, caused by long-continued pressure on the head, and arising, as originally suggested by Dr. E. Kennedy, from " congestion of the vessels in the neighbourhood of the roots of the nerves affected," and it is somewhat remarkable that in none of the cases recorded in that paper, or referred to as having been recorded by Dr. Evory Kennedy or Dr. M'Clintock, had the children been delivered by the forceps.

In introducing the forceps, when the head is high up in the pelvis, Dr. Barnes directs that it should be done in the transverse diameter of the pelvis, and that the lower or left blade should be first introduced, and that when this is fixed it should be held well pressed against the perineum by the back of the operator's

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[a] On distortion of the features in newly-born infants. By George H. Kidd.

hand, while the second blade is being got into its place. In a foot note Dr. Barnes states his belief, that though the adherents of the short forceps generally recommend the upper or anterior blade to be passed first, he believes " the most skilful practitioners in London and Edinburgh now follow the method he recommends of passing the lower or sacral blade first." This is, however, too sweeping an assertion, as it appears from the manuals of both Murphy and Tyler Smith that they introduce the right or upper blade first, and from a lecture published in the *Lancet*, soon after the appearance of Dr. Barnes's (28th March, 1868), it appears that the present professor of midwifery in University College (Graily Hewitt) follows the same practice.

Dr. Hewitt introduces the second blade behind the first—that is, between it and the perineum—drawing the perineum backwards to make room, and gives plates illustrating this method of operating. But another and better plan was recommended by Dr. Radford so long ago as 1832—viz., to introduce the second blade in front of the first instead of behind it. To facilitate this Dr. Radford recommended that the forceps should be made with a " reversed lock," but till renewed in a paper recently published in this Journal[a] this recommendation was lost sight of. With an instrument made as Dr. Radford directs this is the safest and easiest method of using the forceps, and even with the ordinary lock it has much to recommend it, but with this the handles have to be slipped over one another after the blades have been applied to the head. The Dublin instrument-makers now supply both Beatty's and Churchill's forceps with the " reversed lock " of Radford.

" The forceps being well placed and articulated, the head of the child well seized, what is the mode of traction that ought to be chosen?" This is the question asked by Dr. Marchant (de Charenton)—*Du Forceps et du Levier, Archives Générales de Médecine*, July, 1868—and in reply he urges the use of machines for the purpose. Of these he describes two, one invented by M. Chassagny of Lyons, the other by M. Joulin, Professeur Agrégé de la Faculté de Médecine, Paris. Chassagny's consists of a bar to be fastened to the mother's knees, and carrying a screw, which is connected by means of a cord to hooks on the handles of the forceps. By turning this screw, the forceps and child are brought away together. Joulin's *aide forceps* is, however, more in favour with

[a] On Cephalotripsy. May, 1867.

Dr. Marchant than this. It consists of a padded bar to be applied to the mother's ischia, the thighs being moderately flexed. The ordinary forceps is first applied, and a band is passed through the fenestræ, and then attached to a drawing screw in the bar; by turning this screw the forceps and head are extracted. As the band passes through the fenestræ it approximates the blades with a force proportionate to the resistance and thus tightens their hold. By means of a dynamometer the force used is indicated, and so, we are told, there is no occasion for exceeding the limits of a prudent intervention! The use of such machines may, however, be left to those, who, like Dr. Marchant, have not much muscular power; for this it appears was the reason for his entering on an investigation as to the various means of making traction. For some time, he says, he has been obliged to limit himself to fixing the forceps in its place, and, to avoid making traction himself, getting others to do it for him. But if the description he gives of the operation be true, it would be better for both patients and operators that the use of the forceps should be prohibited henceforth and for ever. The accoucheur, he says, who has proved his skill in placing the forceps, must now make trial of his muscular power (and this is not given to all accoucheurs) to pull at the handles of the instrument until the termination of the labour. Science teaches that traction should be made in the direction of the axis of the part of the pelvis at which the arrest occurs; but in practice the operator does as he best can—he varies the direction of the tractions, or even adds lateral movements, which, acting on the soft parts and walls of the pelvis, bruise the parts deeply. If, after many efforts, the head of the infant does not yet come, the accoucheur, bathed in sweat and succumbing under the fatigue, prays his colleague, if he have one, the midwife, or even his coachman, to take his place to draw on the forceps.[a] After these trials, if labour be not yet terminated, then they both harness themselves to the work, and if, after a certain number of trials, it is not successful, the forceps is given up and recourse is had to cephalotripsy. It is easy, he says, to foretell the success of this latter operation on an unfortunate who has had the soft parts of the pelvis bruised, and often torn. The average of mortality is much augmented by the internal disorders caused by all these manœuvres, and it is absolutely necessary to seek for a more easy and efficacious method of traction, which will not expose

[a] In a foot note, Dr. Marchant says he had actually to bring in the driver of his cab on one occasion for this purpose.

the woman to such dangers. Dr. Marchant thinks traction by mechanism fulfils all the conditions necessary to obtain these results, and it will probably be admitted by all, that no amount of mechanical force could well be more injurious than the violent manœuvres he so graphically describes.

## ON THE TREATMENT OF LABOUR COMPLICATED BY OVARIAN TUMOUR.

Dr. Playfair[a] has collected and tabulated the details of fifty-seven instances in which a tumour of the ovary was pushed down before the presenting part, and caused an obstruction to the passage of the child. In thirteen cases the labour was terminated by the natural powers alone, and seven of the mothers recovered and six died, *i.e.* 46·1 per cent., but in these cases the tumour must have been either very small or very compressible. In nine cases the tumour was diminished by puncture, and all the mothers recovered, and six of the children were saved.

In five cases it was found possible to return the tumour above the pelvic brim, and in these also the termination was very favourable, all the mothers recovering. In connexion with these latter cases, Dr. Playfair alludes to, but does not give the details of the case described by Dr. Beatty, in the first series of this journal, and republished in his volume of "Contributions," in which a fibrous tumour that had completely filled up the pelvis, was drawn up by the action of the uterus when labour commenced, and, the child presenting by the breach, delivery was accomplished with a little assistance, the mother making a good recovery.

In fifteen cases craniotomy was resorted to, in four of which the tumour had previously been punctured, but in two of these it was not sufficiently diminished to permit of the passage of the child, and in the other two it collapsed, and perforation was performed, because, it is stated, that the child was known to be dead. Of the fifteen mothers, eight recovered from the labour, and seven died; but in several of the recoveries it is noted that the ovarian tumour increased rapidly in size, and carried off the patient.

Dr. Playfair believes the excessive mortality after craniotomy (1 in 2 instead of 1 in 5) is owing to the great contusion to which the tumour is necessarily subjected in the delivery.

In four cases the tumour ruptured, and two of the mothers

recovered. In two the uterus ruptured before any attempt was made at delivery. Turning was performed four times, four of the mothers dying, and the forceps were applied twice, with one recovery and one death. In one case the tumour protruded through a laceration in the vagina, and was removed by ligature, the patient making a good recovery.

As to the effect on labour of ovarian tumours not obstructing the pelvic canal, Dr. Playfair says he has not been able to collect a sufficient number of cases to throw light on it, but his impression is the labour goes on favourably.

### EXTRA-UTERINE FETATION.

This occurrence is so rare, and the histories of the cases recorded are generally so imperfect owing to the rapidity of the course run by the symptoms, that we are still without the means of forming an accurate diagnosis in an early stage, when alone it might be useful. Dr. Evory Kennedy has placed on record three cases (*Brit. Med. Journal*, January, 1869), which may guide to further observation. The first occurred in a young woman supposed to be three months pregnant, who was attacked with excruciating pain in the region of the uterus, followed by symptoms of internal hemorrhage, from which she sank in two days. On examination during life there were fulness and tension in the region of the uterus, greater than there should have been for the period of the pregnancy; but on vaginal examination the uterus was not enlarged in a corresponding degree, but a doughy resistance, or a feeling like a soft tumour, was perceptible on pressing through the upper floor of the vagina.

In the second case there was hemorrhagic discharge, and a clot came from the vagina, and the patient was supposed to have miscarried about a fortnight before Dr. Kennedy saw her, but she has so far recovered as to be able to go about the house. She was now attacked with violent pains over the pelvic region, and a tumour could be felt occupying the region of the distended bladder, but firm, solid, and painful to the touch. The pain was constant, but sometimes very violent for a few minutes, and extended round to the back and loins. She made frequent attempts to pass urine, which came away with pain, and in small quantities. Next day symptoms of collapse set in, inducing the suspicion that hemorrhage was going on internally. On a vaginal examination the os uteri was found tilted back and towards the

right side, and so completely displaced as to escape detection for some time. It was open, and the tip of the finger could be passed within it. It did not at all present the characteristics of an impregnated uterus. The upper part of the vagina could be felt pressed down into the pelvis by some semi-solid substance, giving the idea of clotted blood. The patient believed herself to be six weeks pregnant. The menstrual discharge, although it had not ceased, appeared in very small quantity last month. The uterine cavity proved, when measured, to be the normal length. Under treatment by opiates, rest, and nourishment, the pain and the symptoms attributed to hemorrhage ceased, but were renewed at the end of a week after making some imprudent exertion, but the ultimate recovery was complete, though slow, and the tumour gradually disappeared, as if by absorption.

In the third case the patient, who had previously had one child, menstruated on 16th July, 1846, and soon afterwards suffered from uneasiness in the uterine region, for which Dr. Kennedy saw her, along with Dr. Dwyer, on the 20th October. Fomentations and opiates relieved her; but some days afterwards agonizing pain in the right uterine and iliac regions suddenly set in, attended with vomiting and great prostration. Opium again gave relief, and she improved in health, and thought she " quickened," and on 20th November Dr. Dwyer heard the placental *souffle*. In March, 1847, she suffered great distress from pressure, and, as she termed it, a bursting feeling at intervals. The fetal heart was carefully sought for at this time, but in vain. On 25th April, 1847, Dr. Dwyer was called to her, as labour was supposed to have set in, but the pains subsided, and went off for ten days, when they returned with uterine discharge, and Dr. Kennedy again saw her with Dr. Dwyer.

On a close examination of the case Dr. Kennedy says they satisfied themselves the os uteri was patulous. The neck was not obliterated. A resisting fulness was felt at the upper part of the vagina, pressing on its upper floor, and more perceptible at the right side of the uterus, the neck of which was traceable, and but little enlarged beyond what would be the case if unimpregnated. It was pushed over to the left side. A sound passed up three inches, and could be felt by the hand placed over the pubes pressing up the fundus of the uterus. The case was now declared to be one of extra-uterine fetation. The patient continued in a complaining state, but able to go about, and not evincing much

appearance of delicacy, but at the end of eighteen years Dr. Churchill was called in to see her, and found her in a state of debility, worn out with discharges. On examination he found, a little to the right of the mesial line, a small opening as large as a goose quill, through which a hard substance like bone could be felt. Higher up there was a small tumour in the posterior wall of the uterus. The bones of a fetus of about the third month were removed in separate portions, after which the patient recovered her health.

Dr. Braxton Hicks has published a rare case of intra-mural fetation (*Transactions of Obstetrical Society of London*, Vol. ix., p. 57), in which the cyst burst into the interior of the uterus, and the fetus was discharged as if an ordinary abortion had taken place, but the placenta and membranes were retained; but four days afterwards violent uterine action set in to expel these, during which the cyst also ruptured into the cavity of the peritoneum, and the patient died in two hours. After death a considerable quantity of effused blood was found in the peritoneum; the uterus was enlarged, the cavity measuring five inches, and at its upper part, to the right side, the cavity was found in which the fetus had lain, with an opening into the uterus, through which it had passed, and a smaller laceration into the peritoneum. The placenta and membranes still lay in this cavity.

Dr. Braxton Hicks has also recorded a further case, in which he removed the remains of an extra-uterine fetus by abdominal section (*Trans. Obstet. Soc. London*, Vol. ix., p. 93). The patient conceived about five and a-half months previously, after which she suffered from metrorrhagia, which ceased after a time. At four and a-half months she had an attack of peritonitis. This was followed by irritative fever, and the cyst opened into the intestines, giving rise to purulent diarrhea, after which the tumour became tympanitic. On examination, the uterus, enlarged to the size of three or four months' pregnancy, was found in the left hypogastrium. On the right side a tumour was found reaching towards the pelvis, but not touching the uterus, its upper border nearly in contact with the liver, and its innermost nearly at the umbilicus. Within this an irregular body was plainly felt, having a strong resemblance to a small fetus. Dr. Hicks cut down carefully on this, and removed the fetus, which was remarkably putrid and offensive. The placenta was found in the lower part of the cyst, low down, and strongly attached, and was left to come away. The cyst was washed out with a strong solution of permanganate of potash, which was continued till the whole of the placenta had come away. From the day of the operation the mother's health improved, and her recovery was excellent throughout.

# PART IV.

# MEDICAL MISCELLANY.

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*Reports, Translations, and Scientific Intelligence.*

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## PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

### THIRTY-FIRST ANNUAL SESSION.

#### DR. RINGLAND, President.

*Labour subsequent to the Cure of a large Vesico-vaginal Fistula.*—DR. M‘CLINTOCK reported the case of a patient who, after having been operated on for an extensive vesico-vaginal fistula (requiring nine stitches), became again pregnant and was naturally delivered of a large male child at the full term without any injury being sustained by the cicatrix or the vagina. About two years had intervened between the final operation on the fistula—for more than one operation was required—and the date of the labour. The vagina was entirely free from bands or cicatrices, except that resulting from the plastic operation. —*February* 13, 1869.

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## TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

#### DR. CUMING, President.

*Case of Hydrocephalus.*—DR. DAVID JOHNSTON read the following case:—J. M., aged five years, an apparently strong, healthy, well-nourished boy, was seized with an attack of vomiting and purging on the night of the 16th of December last. There was nothing remarkable in his previous history, except that for a month or so before his illness he never liked to remain alone, and his mother remarked in him a great dislike to allow his head to be combed.

The vomiting and purging continued up to the evening of the 17th—the day on which I first saw him. He had a hot skin, quick pulse, with great depression and nausea. The vomiting and purging subsided during the evening after the application of a mustard poultice over the abdomen and a few sedative powders.

18th.—He appeared dull, but the pulse was lower and the skin cooler; he slept well during the night; he had commenced to take a little arrow-root and milk; his tongue was slightly furred, and he complained of headache.

19th.—Headache increased; abdomen retracted; with slight dulness of hearing and intolerance of light and sound.

I now requested a consultation, which the parents of the boy readily agreed to, calling in Professor Cuming, who examined the patient very closely, and gave it as his opinion that he was labouring under an attack of hydrocephalus.

Four leeches were ordered to be applied, one to each temple and one behind each ear; the bowels to be kept open with small doses of calomel and scammony: the hair to be taken off and cold applications to the head.

The leeches appeared to produce no effect; the deafness, headache, and intolerance of light increased.

The sickness of stomach had now entirely disappeared. For the ensuing two weeks nothing of importance occurred. He sometimes sat in his cot and amused himself with toys and with his little brother and sister. He took almost as much food as when in health. One night during this time the hall door was closed forcibly, producing a great noise; he gave a sudden start and piercing cry, and appeared frightened; complained of pain in the head, and ever afterwards remained completely deaf.

Jan. 3rd.—When I called to see him he was seated on the servant's knee labouring under an attack of convulsions of the right side, which passed off in the course of half an hour, but the power of the side never completely returned, and during the course of the following month the leg and arm of the same side passed into a state of complete paralysis; but he always complained of increased sensibility of that side. His appetite remained good; his bowels were alternately relaxed and constipated. He was losing flesh rapidly.

About the 1st of March his bowels got very much relaxed; the stools and urine were passed involuntarily. A bed-sore formed over each trochanter and one over the sacrum. Emaciation was now extreme. He lay in a state of semi-consciousness. The pupils were widely dilated, but sensible to the stimulus of light. He was unable to speak; the tongue was clean and was protruded, without any divergence. His power of taste was remarkably acute, so much so that he was able to detect five drops of the syrup ferri iod. in a glass of milk.

During April and May nothing of importance occurred with him, with the exception of the formation of a few boils on the head, which suppurated freely, and discharged a large quantity of healthy pus.

In June there appeared to be a slight reaction in his system, the bed-sores healed, and he improved a good deal in his general appearance.

The appetite was good; he could take during the day a raw egg, above a pint of new milk, and a cup of panada. About the first week of July his bowels got suddenly constipated, the appetite bad; he refused to take any food, except a teaspoonful of milk. The head symptoms increased. He now lay quite motionless up to the time of his death, which took place on the morning of the 12th of July, after an illness of nearly seven months. During his long illness he had grown in height remarkably; his mental state seemed to have been a complete blank; he never spoke, but made some slight inarticulate noise when anything was presented to him which he disliked.

The *post mortem* was made on the following day by myself, in the presence of Dr. Cuming.

Body extremely emaciated; a large boil on the scalp, underneath which the pericranium was somewhat thickened and reddened. Head apparently disproportionately large. On opening the skull there was an almost entire absence of vascularity. The calvarium was thinner than usual, but ossification was complete. The dura mater was very tense, and on slitting it open the brain protruded. The convolutions were flattened; the brain-substance remarkably anemic and very soft. No fluid whatever was found externally. On removing the brain when the infundibulum was cut across, a jet of fluid gushed through the canal, which was quite pervious. The general ventricular cavity was found to be enormously distended by a limpid fluid amounting in quantity to twelve ounces. The ependyma of the ventricles formed a distinct firm membrane somewhat opaque and flocculent.

The brain-substance beneath it was almost diffluent and remarkably anemic. The choroid plexuses were less vascular than usual, and the membrane thickened and opaque. Some granulations were noticed on the arachnoid, especially along the course of the branches of the middle meningeal artery. These on examination presented the character of tubercular granulations.

The most interesting points in this case are :—

1st. The beginning of the attack with vomiting and purging.

2nd. The long duration of the illness, although an apparently acute attack.

3rd. The partial paralysis, one side only being affected, although the pressure must have been general.

4th. The preservation of some of the special senses with the entire destruction of others.

Finally. The possibility of the continuation of life with a brain almost diffluent and subject to so much pressure.

*Aneurism of the Coronary Artery of the Stomach.*—Dr. Cuming exhibited the stomach, spleen, and portion of the peritoneum of a patient who had

been operated on for strangulated hernia by his colleague, Dr. William MacCormac. The patient, a female, aged sixty, was almost moribund on admission into hospital, and died soon after the operation. She had complained of severe pain in the epigastrium for some days before death. When making the *post mortem*, Dr. MacCormac had found a dark mass above the lesser curvature of the stomach between the layers of the peritoneum. On examining the specimen which had been placed in his hands, Dr. Cuming found that the mass consisted of coagulated blood, which had been furnished by the rupture of a small aneurism, situated on a large branch of the coronary artery of the stomach proceeding towards the cardiac end of that viscus.

The blood, which was about three or four ounces in amount, was contained between the folds of the lesser omentum.

*Loss of Speech in Typhoid Fever.*—Dr. Ross read a paper on the subject of typhoid fever, its history and symptoms, from which we extract the following interesting cases :—

Case I.—A young lady, aged eleven years, born in India, was attended by me for typhoid fever in the early part of 1868.

The enteric affection was very severe—diarrhea, melæna to a large amount, and extreme tympanitis. She was conscious, put out her tongue when required, and took her food and stimulants well. Her pupils were remarkably dilated, but the unusual phenomenon in her case was that for three weeks she was unable to speak a single word, and even after this prolonged period she only very slowly recovered her speech. She got quite well in about four months, but the case was very tedious and very unmanageable.

Case II.—A female, aged eighteen, passed through a very severe attack of typhoid fever under my care. The complications in the form of bronchitis and pneumonia and diarrhea and tympanitis were most intractable and tedious. They had, however, yielded to treatment, and we were in hopes that we had gotten our patient, so to say, out of the wood, though in a very prostrated and emaciated condition. When suddenly, without any previous warning, she was seized with right hemiplegia with relaxed muscles and loss of speech. After weeks of careful nursing, nutritious diet in the fluid form with wine and chalybeates from the first appearance of the palsy, she was able to speak, but at first only in the simplest monosyllables. Muscular power was slowly regained, and now, ten months after her illness, she is able to walk very well, but she has only partial use of her right hand and arm.

What was the cause of the hemiplegia in this young girl ? I account for it in this way : the blood supplied to the brain was vitiated and impoverished ; cerebral nutrition was impaired. Then followed softening

of the brain, and immediately antecedent to the paralysis rupture of nerve fibres.

*Case of Extensive Paralysis from Morbid Condition of the Spinal Cord, probably Congestion.*—DR. CUMING introduced a patient whose history was as follows :—B. M., aged 40, pork-cutter. Healthy and vigorous man. Had usually once a-year a drinking-bout of about a fortnight's duration, but was temperate in the intervals. Had been drinking for nearly a fortnight, when he observed on a cold evening in the beginning of May, 1867, when driving on an outside jaunting car, that his hands had become numb and white as far as the second joints of the fingers. When he reached home he found that he was unable to lift a cup, although he could lift anything which he could grasp in his hand. On the next day he had a good deal of spirits, and went to the seaside when he fell asleep on an exposed wall. On awaking he was chilly and shivered, and he found the numbness increased. On the following day when on the street he found that he had some difficulty in walking, and went home to bed. On the succeeding morning he found on getting out of bed that he could not stand. He dressed, however, and was helped on a car and went to the house of a medical man.

I saw him for the first time nearly a week after. He was then totally devoid of power of voluntary motion below the neck, except that he could impart a slight movement to the right shoulder. His sensation was perfect. There was no abnormal sensibility, and no pain or uneasiness. Deglutition and articulation were perfect, but respiration was greatly embarrassed, mainly by an accumulation of mucus in the larger tubes, which he found it impossible to get rid of, as he was unable to cough. No involuntary movements could be excited by pinching or tickling. He was covered with a profuse drenching perspiration which formed a prominent symptom throughout the case. Pulse 126 ; tongue furred, but moist. He could relieve the bladder and the bowels. I found it impossible to make any observation regarding the presence of tenderness, as he had been blistered from the nucha along the whole spine, besides having a large blister on the chest, and being profusely salivated. I subsequently found that no tenderness existed, and the blisters, contrary to my expectation, as the patient could only lie on the back, healed rapidly and well, and neither then nor at any period during his illness had he a bedsore. He slept little, and badly ; urine examined and found normal.

The prognosis was of course unfavourable, and I ordered merely two grain doses of iodide of potassium every six hours. To my surprise I found him alive on the following day. For some days there was very little change, except that the respiration became gradually easier. He was still, however, in such a condition that when turned on the right side

the distress became so great and urgent that he had to be at once laid on his back.

From this period a progressive change in his symptoms occurred. Gradually he began to suffer from involuntary and spasmodic contractions of the muscles of the lower extremities occurring occasionally, and from darting pains in the lower limbs. The power of motion gradually and slowly returned; at the end of three months he was able to get out of bed, and his progress has since gone on slowly, but uninteruptedly towards the regaining of his muscular power. His first attempt at motion caused him a good deal of pain. His general health always continued during his protracted confinement, excellent, and no bedsores formed. At present, nearly two years after the commencement of his illness, he walks slowly but steadily; he is easily overset by an obstacle, but he can walk about for a considerable period with occasional rests. His hands present a well-marked example of the "main en griffe" of Duchenne, and he experiences much difficulty in flexing the meta carpo-phalangeal articulations; indeed, he can only do this to a very limited extent. The muscles though wasted preserve a moderate bulk, and he is able to shave, although with much difficulty, and very slowly. There is a slight tendency to constipation, and urination is a little slow at the commencement, but he is otherwise in excellent health, and is undoubtedly steadily improving. He is not at present under any medical treatment whatever.

I do not feel myself able to pronounce definitely on the nature of the spinal lesion which existed, and of which traces are still present, but I have regarded the case as one of sufficient interest to be recorded. I am disposed to consider that the affection was mainly, if not entirely of a congestive character. The combination of symptoms present consisted of complete paralysis of a paraplegic form, no tingling, no increased reflex excitability, no pain or tenderness, power over the bladder, and rectum, profuse drenching perspiration, appetite and digestion normal, sleep imperfect, and dyspnea from inability to cough. Subsequently pain, spasms of the lower limbs, peculiar deformity of hands.

*Excision of the Lower Jaw.*—Communicated by W. MacCormac, M.D.; M.R.I.A.; F.R.C.S.I.; Surgeon to the Belfast General Hospital.— The operation for the removal of one-half the inferior maxilla is a surgical procedure both difficult to perform, and of comparatively rare occurrence. It is only in more recent times, indeed, that patients afflicted with disease of the lower jaw received surgical aid in any shape. And to British surgery is due the merit of the innovation, Mr. Anthony White having performed resection of a portion of the lower jaw in 1804, several years before Dupuytren or Cusack commenced the series of brilliant successes which established the operation as a sound and safe surgical proceeding. The number and

size of the vessels involved render the risk from hemorrhage, both immediate and consecutive, very great—so much so that many amongst the earlier operators recommended the ligature of the carotid as a preliminary step in the operation. Probably in no operation of the kind is an artery of the importance of the internal maxillary placed in such dangerous proximity to the knife, nor could there be one more difficult to secure should it be wounded. Without further preface I will give a short account of a case in which I performed this operation.

Ellen M'Cappin, aged twenty, a healthy country girl, was admitted recently to the General Hospital under my care. About two years ago, not having experienced any previous illness, she noticed that the left lower jaw was swollen. From this date it continued to increase gradually and without pain.

On examination the left side of the lower jaw from the bicuspid teeth to the sigmoid notch is found to be involved in a very hard irregular tumour. It is felt on both sides of the maxilla but projects more externally, where three distinct prominences, continuous with each other, can be distinguished. One of extreme hardness covers the ascending ramus as high as the notch; another, the size of a small hen's egg, also very hard, projects beneath the body of the bone, whilst the third, elastic and comparatively soft, involves the whole of the alveolar border. The tip of the coronoid process, the angle of the jaw, and articulating head of the bone, alone appear uninvaded by the growth. The third or wisdom tooth, never made its appearance. The second molar got loose, and was extracted some time ago; and the first molar I removed myself, thinking, possibly, it might thus give exit to fluid from the elastic tumour on the alveolus. As none came away, the cystic nature of the growth was excluded from consideration. The diagnosis before operation as to whether this tumour might be fibrous, cartilaginous, or myeloid, was almost impossible. I thought it probably fibrous or fibro-cartilaginous, with deposit of bone, judging from its extreme hardness. The discrimination of the nature of the growth was, however, of no practical importance to the patient, as there could be no doubt as to the necessity of the removal of the affected portion of the jaw, which I decided to disarticulate. The patient having first been fully chloroformed, the first bicuspid tooth on the affected side was extracted, as in this situation, it was decided to divide the bone. A nearly rectangular incision was then made commencing opposite the lobe of the ear, proceeding downwards to the angle, and thence across the body to within half an inch of the symphysis. All the soft parts down to the bone were divided in this first cut. The facial artery and a mental artery being wounded, were at once taken up and tied at both ends. The flap thus formed was carefully dissected up, the knife being kept close to the bone, and in this way, and also by having commenced the vertical incision so low down, the parotid

duct, and the chief branches of the facial nerve, escaped injury. The outer surface of the tumour being now thoroughly exposed, the jaw was cleared at the point of section in front of the mass, and divided with a small saw cutting from below upwards. The operator to do this must stand behind the patient, the head being thrown back, and the section is thus effected with great ease, as the lower jaw is steadied against the upper, and the soft parts can readily be held aside, and incur no such risk of injury as when the end of the saw is inside the mouth. When the bone was nearly cut through, a bone forceps completed the separation by dividing the alveolar process.

The jaw was now everted, and the edge of the knife being kept scrupulously close to the bone, the deep fasciæ and the mylohyoid and internal pterygoid muscles were dissected off the inner surface. By depressing the jaw forcibly the attachments of the temporal muscle were brought into view and severed; then the bone was rotated outwards, and the external pterygoid muscle divided with the utmost caution. The joint was opened in front, its capsular and other ligaments severed, and the tumour removed. Only two other small arteries required ligature, and three ounces of blood were certainly not lost during the operation. The influence of the chloroform was maintained throughout. The wound having first been bathed with carbolic lotion, was closed with six interrupted sutures, inserted through the whole thickness of the cheek. Carbolized dressings were applied, but no plugs of lint introduced internally, which serve, I think, no useful purpose, form a nidus for the collection of foul discharges, and are painful and difficult to remove. The only instruments I had occasion to use during the course of the operation were a scalpel, saw, and cutting forceps, and from the first incision to the insertion of the last suture, and application of the dressings, the time occupied was exactly twenty-four minutes. The after-progress of the case proved very satisfactory. The wound united by adhesion. There was nothing complained of by the patient but soreness in the throat, which lasted only two days. One week after the operation she sat up perfectly convalescent, all the stitches and ligatures removed, and the wound almost quite healed. The small amount of deformity is very surprising, and the situation of the incision and cicatrix are quite invisible when the patient is looked at in front, in fact it would be difficult for a stranger to tell from which side the jaw had been excised. There is now no retraction of the remaining portion of the maxilla, and the inferior incisors correspond exactly to those in the upper jaw. On making a section of the jaw the tumour is seen to spring from its interior, distending the bone in all directions, somewhat irregularly, or more to the outer side, as before mentioned. It is of a uniform white colour, dense, and firm to the touch, and contained spicula of bone. In the centre of it is a small tooth, which is the missing wisdom tooth. To the unaided eye its

characters are those of a fibroid growth, and the microscope shows that it contains fibres and elongated nucleated cells. There is every reason to hope that the disease, having been completely extirpated, will not return.—*April* 5, 1869.

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## TRANSACTIONS OF THE CORK PATHOLOGICAL AND MEDICO-CHIRURGICAL SOCIETY.[a]

*Case of Intestinal Obstruction.* By Dr. W. JACKSON CUMMINS, Physician to the County Hospital, &c.

October 6th.—I was called to P. M., publican, aged thirty, complaining of headache, severe abdominal pain, and general pyrexia. Three grains of grey powder and seven of Dover's powder afforded him relief and a good night, but on the

8th.—The abdominal pain was again severe and paroxismal, and accompanied by some general abdominal fulness and excessive tenderness, limited to the ilio-cecal region ; the bowels had acted several times, the discharges being thin and feculant. Six leeches were now applied to the tender part, followed by fomentations and a linseed poultice. The hyd. c. creta and Dover's powder were also given at bed-time, as before.

9th.—This treatment afforded much relief, removing almost entirely the pain and tenderness ; pulse 90 ; skin cool and perspiring ; tongue almost natural ; no return of diarrhea. The poultice was continued as before, and the hyd. c. creta and Dover's powder (the latter in reduced dose), given every fourth hour.

10th.—Appears better in every respect, except some return of the ileo-cecal tenderness and pain ; no gurgling ; bowels have not acted since.

The medicine in slightly modified dose was directed to be continued, and six leeches applied to the ileo-cecal region.

Towards evening the abdominal pain and fulness had become so severe, especially in the hypogastrium that I was sent for, and found the leeches, which had not been obtained until late in the day, still on. There was much hypogastric and general abdominal fulness, and severe paroxismal pain ; bowels had not acted ; tongue white and moist ; pulse 100 ; breathing markedly thoracic. As the patient was unable to micturate I passed a catheter and drew off nearly a pint of urine, and had hot fomentations, followed by a large warm poultice, applied to the abdomen, confidently hoping that the leeches and other soothing applications would promote a natural relaxation of the bowels.

11th.—I paid an early visit, and was disappointed to find that my patient

[a] These Reports are furnished by the Secretary, Dr. Purcell.

had spent a bad night, suffering extreme torture in the left hypogastrium, which, on examination, I found occupied by an uncircumscribed tumour, dull on percussion, excessively tender to the touch, and communicating to the hand a doughy inelastic sensation. The remainder of abdomen was full and tympanitic; tongue furred; breathing thoracic; pulse feeble, irregular and unequal; not easy to count, but at least 120; countenance collapsed. While I was present he vomited, for the first time, a quantity of dark green fluid. I immediately ordered him a glass of hot punch, and as the bowels had not been opened for some days, drove home for a syringe and long tube.

On my return I found that the punch had been retained, and had enabled him to rally considerably; pain still paroxismal and severe.

I passed the stomach pump tube a few inches up the rectum, and gently injected a large washing basin full of warm water. This was retained, and after a time followed up by another basin full of warm gruel containing soap and oil.

The distention caused by this was most distressing, producing violent vomiting and pain, but I persevered until the abdomen contained six or eight pints, when I withdrew the tube; it was followed by the return of a pint or two of fluid, which was ejected with great force, but without admixture of feces or flatus. I now ordered pills containing each one grain of opium, every third hour, directed that the fomentations should be assiduously applied, and suggested a consultation.

Dr. Townsend (senior) met me in consultation at noon. The opium pills had tranquillized the patient and relieved pain; pulse had become full and regular, and come down to 100; vomiting persisted.

Ordered the pills to be continued every second hour for two more doses, and then every fourth hour; and I threw up, by stomach pump tube, introduced *just within the sphincter*, three large washing basinfuls (about ten pints) of warm water, which caused as before (during the latter part of the operation) severe pain and violent vomiting. The greater part of this enormous injection was retained.

Fomentations, poultices, &c., were directed to be used as before, and a diet of milk and soda water, with a table-spoonful of brandy, every second hour, was prescribed.

I again visited him in the evening and found that vomiting had been almost constant, the ejecta being copious, and of a dark green colour. Some of the milk and soda water had however been retained. I again threw up three basinfuls of gruel in which a few eggs had been beaten up. Almost the entire was retained, and caused the same pain, distention, and vomiting as before. Pills to be repeated every third hour during the night.

12th.—Abdominal distention and tenderness very great; pain paroxysmal and severe; vomiting almost constant; nothing from bowels, not even

flatus; tongue furred; pulse full, 100; has slept a little; breathing less markedly thoracic. Dr. Townsend again met me in consultation, and we determined to continue the pills every third hour, and to have the following liniment rubbed over the abdomen twice a day. Lin Belladonnæ, ℥ pp. glycerinæ, ℥i. p. I again threw up three basinfuls of gruel and eggs, with the same effect as before, except that the vomited matters had a distinctly stercoraceous odour.

In the evening I found that the doughy inelastic tumour had moved from the left iliac region towards the median line, indicating some peristaltic action of the affected part of the small intestines. The pain was also less severe, but the tongue was much furred, there was excessive thirst, and the vomited matters had been stercoraceous during the entire day. The pulse, however, continued pretty full and only 100. I again threw up the gruel and eggs as before, which caused horribly stercoraceous vomiting, but on withdrawing the tube (which since the first injection I had introduced only just within the sphincter) I had the satisfaction of finding that the enema was ejected with great force, and accompanied with much flatus, having a true feculent odour; there also appeared to be some broken up feces mixed with the gruel.

The patient informed me that the belladonna liniment had afforded much relief on each application, causing an agreeable sensation of internal heat and glow. Pergat.

13th.—At our visit this morning we were gratified to find that two feculent stools (one of them semi-solid) had been passed during the night, and that vomiting and pain had entirely ceased. We directed the liniment to be continued, and two opium pills to be taken at bed-time.

14th.—Bowels have acted several times; pulse 96; tongue improving; no vomiting nor pain; abdominal fulness less; rept pil hora somni. Dr. Townsend now considered the patient well enough to take his leave.

15th.—Had severe pain in the left hypogastrium again last night, followed by several large pea-soup dejections from bowels; tongue furred; pulse 100; skin hot, especially over abdomen, which is tympanitic and tender. A copious eruption of boils, due probably to the fomentation, poultices and liniment, has appeared on the abdomen, especially towards the right side where the leeches were applied; all topical applications have therefore to be omitted. There has been no return of vomiting. I ordered an opiate pill to be taken every sixth hour, and ice to be freely swallowed; diet of milk and beef-tea; no stimulant.

16th.—Abdominal tenderness less, but pea-soup dejections continue as before, and are very copious. Pergat.

17th, 18th, 19th.—Has continued in much the same state, the diarrhea gradually decreasing, but still copious and unchanged in character. The abdominal boils are very sore, but tympanitis and tenderness rather less. Pergat.

20th.—Had a chill at bed-time ; in other respects as before.  Pergat.

21st.—Free diaphorisis during the night and a good deal of sleep ; the abdomen has reduced in size, and the tenderness is now confined to the ilio-cecal region.  The tongue is clearing at tip and edges ; pulse 90 ; continue pil sextis horis.

22nd.—Tongue clearing rapidly, dejections less frequent, and unaccompanied by pain ; the pill to be taken only morning and evening.

23rd.—Much better ; dejections improved in character, and much less frequent ; pill to be taken only at bed-time.

26th.—Diarrhea, which had continued more or less up to the present time, has to-day been replaced by a natural motion.  There was much perspiration last night ; tongue quite clean ; pulse 84 ; abdomen almost natural, except for the very sore boils, which cause great suffering ; omit the pill ; to take a little wine in arrowroot.

28th.—Was up for awhile yesterday, and eat some chicken with relish.

Nov. 16th.—Has been tolerably well since, but even now is obliged to be most careful as to diet, the smallest indiscretion in that particular having more than once since his illness caused abdominal pain and heat of skin.  Stimulants, even in great moderation, have always disagreed, so that he has been obliged to avoid them altogether ; but, on the whole, he is gradually regaining his usual health, and my apprehensions as to the possible occurrence of hemorrhage are almost at an end.

I feel that an apology is due to the society for the tedium with which I have related this case ; but it appears to me both interesting and instructive.  It was ushered in as a case of enteric fever, but soon took on the character of idiopathic enteritis, and presented during its decline and convalescence the symptoms of ulceration of Peyer patches.

Obstruction of the bowels, attended by collapse, and proceeding to stercoraceous vomiting, occupied the mid period of the illness, and very nearly proved fatal; while accompanying this complication, and probably connected with it as a cause, we had the doughy inelastic tumour in the left hypogastrium, which subsequently moved towards the mesial line.

It is not easy to say positively whether this tumour was an intus-susception or an agglutination of some coil of the small intestines by local peritonitis.  The complete absence of tenesmus and bloody dejection, as well as the recovery of the patient without expulsion of an involuted portion of the gut argues rather against the former opinion, while the peculiar feel of the tumour was more in favour of the latter ; but the disappearance of the swelling after the intestine had become pervious is strong evidence in favour of its having been an involution which had become unfolded under the influence of the remedies used, and to this supposition my own opinion inclines.

We can hardly doubt that ulceration of the intestinal follicles was one

of the lesions which existed in this case; and if one of these ulcers extended all round any portion of the ilium it might have caused obstruction by acting as a solution of continuity (Brinton); again, the obstruction may have been due to a paralyzed condition of the ilium directly due to the enteritis; or, possibly, the increased peristaltic action of the bowel above the inflammation may have forced a portion of the healthy bowel—constricted in its transverse diameter by peristalsis—into the inflamed part, which, being paralysed, was incapable of contraction.

In ordinary obstruction, due to a mechanical impediment to transit of the intestinal contents, the portion of intestine above the constriction becomes distended, paralysed, inflamed, and gangrenous in due course, but in the case I have read the inflammation preceded the obstruction, and must be looked upon as its direct or indirect cause. But in all forms of obstruction an abnormal peristalsis quickly supervenes; and if unable to overcome the obstacle, becomes a new source of danger, specially so when inflammation is the cause of obstruction. It requires, therefore, very little reflection to perceive that treatment should rather be directed towards controlling excessive peristalsis than to increasing it; and yet we find purgatives again and again administered in this disease. It is not many weeks since I read of a case very similar to the one I have detailed, treated in a justly celebrated clinical hospital with calomel, croton oil, and elaterium *almost to the last*, although the *post mortem* revealed inflammation and gangrene of a large portion of the ilium.

Since I treated the above case I have had the good fortune to meet with the late Dr. Brinton's valuable work on "Obstruction," and it is really refreshing to read his rational remarks on treatment—so opposed to the principle of purgatives, which is too common. Opium is Dr. Brinton's sheet anchor; and I have little doubt that in the case I have read it was opium which saved a life which would almost certainly have been lost had purgatives formed a part of the treatment.

I had some doubts about the propriety of using belladonna, even as a liniment, being aware of its alleged effect upon the nervous centres as an antagonist of opium.

The result, however, proved that such fears were groundless, as the one sedative seemed only to assist the other in controlling excessive peristaltic action and allaying morbid irritability and spasm.

The large diluent injections used in this case acted most beneficially. I must admit that I was astonished at the quantity received and retained, amounting to between nine and ten pints—possibly more—morning and evening, and even three times in one day. Such quantities must have distended the large intestine to its utmost extent; and it is fairly open to discussion whether the ilio-cecal valve did not permit a portion of each enema to pass into the small intestine.[a]

[a] In the discussion which followed the reading of this case, several instances were

Dr. Brinton states that it is only when extreme distention exists in both ilium and cecum that regurgitation through the valve is possible; but we know that in typhoid fever ilio-cecal gurgling, due to regurgitation through an ulcerated and incompetent valve, is a common phenomenon. If such a lesion existed in the case of P. M., a portion of the injection may have passed through the valve and pressed back an involuted portion of intestine, thus relieving mechanical obstruction.

In one case attended by Dr. Brinton, where the stricture occupied the upper part of the ascending colon, " nine pints of injection were always found to be the maximum during the many days which preceded the complete and permanent relief of the occlusion;" and he adds that a " larger quantity would scarcely be receivable by the whole of the large intestine, inasmuch as in such a case the circumstance that the obstruction occupies the small intestine often makes the belly much more sensitive to distention, however gently and patiently the process of filling the bowel may be carried out."

As a practical point in connexion with injection, I would remark that complete occlusion of the anus by a tube of large diameter seems to me more important than the passage of such tube any distance up the rectum. I used the stomach pump tube, and although the aperture through which the fluid passed was at the side, instead of the end, I soon found that its introduction *just* within the sphincter was sufficient to secure full injection. This is what we should expect, as, however far a tube is passed, the pressure backwards on the sphincter of the column of fluid which distends the rectum, is an element in the propulsion upwards of each additional quantity injected.

*Case of Cerebro-spinal Fever.*   By JOHN POPHAM, M.A., M.B., Physician to the Cork North Infirmary.

Jeremiah Horgan, aged thirteen, was admitted to the Union Fever Hospital on Oct. 16th, 1868.

Oct. 17.—He passed a sleepless night; furious delirium; leaping out of bed, screaming and talking incessantly, chiefly about following horses, his ordinary occupation. To-day he mutters incoherently; has optical illusions; for example, he jumped up in the bed and cried out, " there is a horse in the place," and, as if it were pictured on his retina, he pointed to the opposite wall, crying out, " there 'tis." He also fancied there was a gate before him, and described it. Being asked his name, he told it correctly, and also where he lived and went to school. He also

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mentioned of fluids used as injections being tasted in the mouth; such may, how-ever, have been due to absorption; but Dr. Popham mentioned one case, *which he witnessed,* where castor oil, which had been injected into the rectum, was vomited shortly afterwards in unmistakable purity.

knew the names of things shown him.   His face has a wild, scared look; his head is kept in perpetual motion; jactitation of the hands; eyes natural, except that branches of vessels from the external canthus extend to the left cornea.   Pulse 120; great hyperesthesia of the back of the neck; tongue furred; bowels confined; some small purplish spots on the breast.   A person has to sit beside him to restrain his efforts to get up.

Head ordered to be shaved; leeches to be applied behind the ears; a dose of the house-medicine to be given at once; ice to head, and a table-spoonful of the following mixture every third hour :—

> ℞. Ammonii bromidi, ʒi.
> Aquæ, ʒvss.
> Syrupi, ʒss. m.

Oct. 18.—Had no sleep either in the day or night; delirium like that of the preceding night, chiefly about pulling grass for the horses. He kept up all night the same incessant talking, turning from side to side, and when left for an instant, getting out of bed.   When I was in the ward he kept shouting, " Mike, Mike;" he took up the blanket, and held it up as he would the reins, and cherupped to the supposed horse to get along; at other times he pointed with his index finger to some imaginary objects.   He told his name correctly, and put out his tongue; he was not so restless as on yesterday.   His face had a peering look, not directed at you, but at something beside or behind you, while he seemed heedless of real objects; it was, in fact, more subjective than objective vision.   His head was in continual motion, quite involuntary, not rhythmical; all the features working spasmodically; hands and feet twitching; at times picking the bed clothes, or pulling them over his head.   He drank fairly, but occasionally kept some of the fluid in his mouth, and then made an effort to swallow it.   Pulse 124.   The sounds of the heart could scarcely be separately distinguished; impulse feeble; respiration heard distinctly over the chest; the inspiration is short and quick; the expiration is slow and interrupted; great tenderness of the back of the neck; he cannot bear it to be touched; he seemed quite exhausted from want of sleep; no improvement from the leeching or cold applications.   Vertex ordered to be blistered and dressed with mercurial ointment.   Continue the mixture of bromide of ammonium.   Beef-tea and new milk ad lib.

> ℞. Mixt. camph., ʒi.
> Liq. opii. sedative, m. v.
> Liq. ant. tart. m., x. m.

This draught to be repeated after four hours, if needed.

Oct. 19.—He dozed a little after first draught; slept some hours after the second; some nausea to-day and vomiting; the eyes remarkably clear and widely opened, giving them a staring look; he whines constantly; the head oscillates now rhythmically from side to side; nucha is intensely

painful and stiff; he screams when he sees any one about to touch it; tenderness on pressure all down the back, and stiffness; when he is raised to the sitting posture the back is moved as if it were a rigid, inflexible body, and resists all efforts to bend it. When I tried to press on the cervical vertebræ he seized my hand and dug his nails into it. He also feels acutely the pinching up a fold of skin on the legs. His hands are occupied drawing up the bed-clothes and picking them. Pulse 120. Speech to-day is unintelligible. Asked a question, he mumbles a reply, which is merely a confusion of sounds; yet he puts out his tongue and gives me his hand; he passes the discharges involuntarily. The blister over the vertex rose well.

Ordered to omit the mixture of bromide of ammonium, and to take 5 grains of the bromide of potassium every third hour. Brandy to be given in milk. Repeat the anodyne, as before, without the vin. ant. tart.

Oct. 20.—He got but one draught, as he slept well after it. He is silent and quiet to-day, buried seemingly in internal contemplation; the eyes staring, the upper lid raised to the utmost, so that the white appears above the cornea; the pupils still obey light; a dark pigment has come out beneath the lower lid; the conjunctiva are clear and pearly; the oscillation of the head is intermittent; his upper lip is quite drawn up, uncovering the gums, while the angles of both the lips are depressed, giving the face a peculiarly sorrowful expression. When I visited him a few hours later both arms were symmetrically extended at full length, and at an elevation of 45 degrees; the power of swallowing is less; he keeps liquids some moments in his mouth before swallowing them. Aphasia, both from loss of words and inability to articulate; still he knows what is said, and tries to answer; the tongue is not able to be protruded; the pain of the neck is excessive; the back rigid; purplish stigmata still visible. Continue the bromide of potassium. Back stuped with hot flannels, sprinkled with spirits of turpentine. The blistered surface on vertex to be kept discharging by Albeyspiere's plasters.

Oct. 21.—Got a single draught last night; slept, but very uneasily, and moaning; his countenance looks sad and pitiful, quite vacant in expression. On rousing him up and asking his name, he answered automatically, "Jerry Horgan, sir;" but he made no answer to any other question. Eyes to-day half closed; on being touched the upper lid became forcibly contracted and resists any effort to raise them. Abdomen is rigidly contracted. The pulse has ceased to be felt in the wrists, but still beats at the elbow 130, and very weak; the knees are forcibly drawn up to abdomen; the sensibility still remains acute; touching the muscles of the neck makes him scream. Some pale maculæ are visible to-day, and "taches bleuatres" show themselves in two places on right hip, in size about an inch by one-half; much jactitation. Beef-tea and brandy enemata during the day.

Oct. 22.—All the symptoms aggravated ; respiration very slow, and the pause after expiration much prolonged ; he seems unconscious ; still swallows a little ; the colour of skin has darkened.

He died in the evening.

Appearance of body thirty hours after death. Rigor mortis considerable ; legs and thighs still stiff ; the under surface of body is purple, almost black ; the face retains the look of painful contraction, especially at the angles of the lips, which are wrinkled and drawn down. The body is much emaciated, more than would be supposed from the length of the illness ; dulness on percussion over the spleen ; abdomen retracted.

The head only could be examined. On removing scalp it was very dry, scarcely yielding a drop of blood. When the calvarium was taken off, the dura mater appeared turgid with almost black blood, especially near the longitudinal sinus ; the meningeal vessels were thrown out in strong relief like twine. The sinuses of the dura mater were gorged with dark fluid blood, which spouted out on opening them. About two ounces of tarry fluid blood, mixed with serum, were found at the base of the skull, but no pus or lymph. Spots of lymph, of the size of sago grains, were found in great numbers along the upper margins of the hemispherical fissure. The pia mater was throughout intensely injected and easily stripped off. Sub-arachnoid effusion, causing an opaline appearance, was found in various parts of the upper surface—none on the lower. On section the cortical substance of the brain was very vascular, and the medullary darkened by exudations from small vessels ; some fluid in the ventricles. The whole substance of both cerebrum and cerebellum was softer than ordinary. Weight of brain, fifty-two ounces. Much serum appeared to be in spinal canal, but the state of the spinal cord could not be examined.

*Case of Sub-conjunctival Ecchymosis, heralding an attack of Cerebral Aphasia.*—One day last summer a dispensary patient named Thomas Ruarke came to me complaining of an extravasation of blood under the conjunctiva of the right eye, completely hiding the sclerotic. I asked him did he get a fall ; he said not. I told him not to mind it, as it would not affect his vision, but would be absorbed in three or four weeks. However, I had never seen the like before, save as the consequence of a fall, or paroxysm of whooping cough. Ruarke then proceeded to tell me that on the day previous he was writing a letter (in his capacity of village scribe), when his hand shook and he felt an unaccountable nervousness. As he had been long suffering from cough, dyspepsia, prurigo, and slight hemorrhoids, and was in the habit of describing his symptoms with tiresome minuteness, I did not attach much importance to this new symptom, and merely prescribed a tonic. Next morning his wife sent for me to see him. I found him making vain

attempts to speak intelligibly. He did not stammer, but could not finish any sentence, or recollect the words he wanted. Wishing to see me, he pointed to my house and repeated " the man there " frequently; he could not say " Doctor." He would begin a sentence in a rapid but articulate way, and then stop abruptly. It was no use to suggest the missing word; he would not take the hint. When asked where had he any pain, he pointed to the left temple and left side of his head, never to the right side. He also pointed to his stomach and belly; but I think this was after I had given him a large dose of calomel, which perhaps griped him. He was not paralysed in any limb, and put out his tongue straight. As he kept repeating the word " gunna," I fancied he meant a pen, and therefore gave him one, with ink and paper. He scrawled his name all over the paper, and then looked up inquiringly, saying in angry tones, " Well ? " " Well ? " I told if he wished to communicate anything to me to write it, but he evidently could not accomplish it, but thought I wanted a specimen of his art. He remained in this state for some days till the calomel (which I gave as a purge) salivated him. His wife pointed out that the spittle was very fetid, but even when in his ordinary health he had an ugly habit of spitting about. However, he soon pointed to his jaw and gums, and I found them much ulcerated. As the ptyalism went on the extravasated blood began to be absorbed, and his speech became more intelligible. The first use he made of his speech was to complain that " that lassie " starved him, meaning his wife. Of course he had been kept on slops, owing to the state of his mouth. He could not always succeed in explaining himself, and then would get very cross. I thought it likely that the case would result in general paralysis and idiotcy, but had never seen a precisely similar case. The man has been a long time in hospital since then, and I understand will speak constantly of friends who are to bring him money, and again cry piteously.

21st December, 1868.—Ruarke was buried on last Saturday. Dr. O'Reilly, the medical attendant of the hospital, told me that some time after entering the infirmary he got a stroke of paralysis, which made his face quite crooked. Soon after he got paraplegic and very noisy, and inclined to be quarrelsome. He could not get out of bed, however, or express himself coherently. Eventually gangrene attacked one foot, and he died.

The points of interest in the case are the spontaneous and copious extravasation of blood, indicating a hemorrhagic tendency in the cerebral vessels, the occurrence of pure aphasia without loss of consciousness or paralysis, and the pain referred to the left temple.—*March* 10, 1869.

*Case of Pelvic Abscess*—July 11th, 1869, saw Catherine M'Grath, labourer's wife, Crow-hill. She told me that she was confined naturally

on the 12th of May of her third child, and that ten days or a fortnight later she got cold from washing clothes, lost her appetite, and got pains in all her bones. At first she did not remain constantly in bed, but had done so for three weeks before I saw her. The skin, tongue, and pulse were natural, and she said the pains in her bones were leaving her, adding that if I gave her something to give her an appetite she would soon be all right. Believing it to be the end of an attack of influenza, I agreed with her conclusion, and merely prescribed quinine, directing her to remain in bed another week. On the 28th of August her mother came to the dispenaary and asked for some turpentine to rub to the woman's leg. I expressed surprise that she was not quite well, and inquired if she was up. Yes, but suffering great pain in one hip and thigh, to relieve which she wanted the turpentine. Suspecting the nature of the case, I told the old woman not to use the turpentine till I should see her daughter. When I called I found her sitting over the fire looking rather feverish. I directed her to get into bed, and found she could scarce limp across the room, the thigh being flexed upon the pelvis, and motion very painful. She could not extend the leg or lie on her back. On examination I found that pressure just above Poupart's ligament caused great pain, chiefly towards the spinous processes of the ilium, and also, what I can't well account for, over about two square inches of the dorsum ilii behind the anterior superior and inferior spinous processes. She also suffered much pain of an intermitting kind along the track of the anterior crural, and obturator nerves. I could not detect a tumour above the groin, but could not press firmly, as it caused her great suffering. I told her that she must stay in bed, that an abscess was forming, which would in course of time come to the surface; that it would be very tedious and painful. Should it point above the groin I would lance it, but that it might break into the vagina, rectum, or bladder.

She seemed to believe that I was right, but cried out that she could not live long in such torture. I assured her that she would, and would, I believed, recover, citing the case of a lady whom I attended for pelvic abscess some years ago. The wise women of the place scouted the idea of an abscess, neither visible nor tangible. She asked to be allowed to apply a blister to the dorsum ilii and outer part of thigh. I permitted her, but said it could do no good, as the disease was in the hollow of the bone, not outside it. I thought antiphlogistics unsuitable, and ordered quinine, broth, and wine. The blister did no good. She would not take the quinine. Opium gave her a headache, and caused nausea. She tried poultices for some days, but would not continue them. She was hopeless of cure, and declined to use any more remedies except very dilute iodine ointment; would take very little food. I saw her several times up to the 14th October, during all of which time she lay on the

sound side. No sign of an abscess in flank. I told her it might break into the vagina, but made no examination. Knowing that she would object to it, and being unable to promise corresponding benefits, on the 14th, it burst, and a great quantity of matter flowed away, " per vaginam." She said the pain had abated for three days before. The sciatic had evidently been engaged, as the abscess enlarged, since the pain, at first limited to the thigh, ran down to the heel. In hope to keep the abscess open, I directed the vagina to be syringed thrice daily with warm water and Condy's fluid. This, however, was not done. She took some broth and wine, but after flowing for three days the abscess closed, and in a week seemed to be filling again, to judge by the return of the pain, which continued very great up to the 21st November, when it burst again, either in the groin, or, as it seems to me, from her description, *below* Poupart's ligament. I may be mistaken in this, however, as her family were at dinner when I arrived, and I could not well examine her before them. It flowed freely for eleven days ; the pain left, and her spirits and appetite improved. On the 19th of December she could limp across the room with a stick, and was rapidly gaining flesh.

February 2nd, 1869.—Mary M'Grath is now quite well; is not in the least degree lame. I paused at her door to hear her singing to her children, evidently contented with her lot, humble as it is, and thankful for health regained. For six weary months she had prayed for death, as a release from intolerable pain. Some four years ago I attended a lady for pelvic abscess along with Dr. Currey of Lismore. I diagnosed the abscess early, from the general symptoms—lameness, tenderness on pressure above the groin, inability to extend the leg, hectic fever, &c.; but the most careful examination for some time failed to afford conclusive proof of its existence, and never having met a case of the kind before (except one of acute abscess), I began to think it might be a rheumatic affection. Eventually a tumour, large as a goose egg, formed above the groin, causing exquisite pain by its pressure on the nerves (anterior crural obturator, and *lastly* the sciatic). If any but a puerperal woman presented the same symptoms I would have supposed it a case of morbus coxæ perforating the acetabulum. However, pressing the head of the femur into its socket caused no pain, provided the position of the limb was not altered. The lady was made to take wildfowl, ext. carnis, claret, &c., but looked like one in the last stage of phthisis. Dr. Tanner saw her in consultation with Dr. Currey and me, and considered it nearly time to open the abscess, which Dr. Currey did with a bistoury some days afterwards. A breakfast-cupful of pus flowed away, care being taken to exclude the entrance of air into the sac. The pus was laudable and not fetid. Dr. C. put a narrow strip of lint into the lips of the puncture to prevent its closing, and then applied a compress of lint

wrung out of hot water, and over it an elastic woven bandage. He changed the dressing twice a day for a fortnight, the discharge being very great. It gradually diminished to a few drops of serum, and the lady recovered perfectly, having had another baby since then, which makes me suppose no uterine adhesions took place, as the labour was speedy and natural. Mary M'Grath's case, where the abscess burst, "per vaginum," and could not be kept open, was much more tedious.— *March* 24, 1869.

*Case of Scarlatina, followed by Dropsy—Convulsions—Hemiplegia—Recovery.*
  By W. C. TOWNSEND, M.D., Senior Phys. to County Infirmary and General Hospital.

December 18th, 1868.—I was sent for to see Master N., aged eleven; a fine healthy boy, well nourished, and hitherto enjoying excellent health of mind and body.

On my arrival I was informed he had been ill for two days with a supposed feverish cold. On examination I perceived that he was covered with florid rash; in fact, he was as red as a lobster, hot, feverish, and thirsty; throat or glands in the neck not in the slightest degree engaged. He was in good spirits, had slept well the night before, and taken drinks freely; his bowels had acted well, and the secretion from his kidneys was large and apparently normal. Ordered citrate of potash mixture, one ounce every three hours, to have drinks freely, farinaceous diet.

He was kept on this treatment for a few days, with an occasional dose of grey and rhubarb powders. After the fourth day he had chicken-broth, and his convalescence was uninterrupted until the eighth day, when desquamation commenced. The urine, which was copious, was carefully examined, and exhibited casts, but no blood. Ordered warm baths every alternate night, claret, eggs, chicken. I took my leave on the 4th of January. On this day he appeared quite well, running about his room; tongue clean; appetite good; kidney secretion large, and apparently normal; specific gravity 1020. I gave most particular directions as to his clothing, that he should wear warm flannels next his skin, and the greatest care to be taken lest he might get chilled, the weather being very inclement.

On the 10th of January I found him in my study with his nurse. On inquiry it appeared he had been driven to my house on a Norway car, the nurse having been alarmed at finding his feet slightly swollen, and the secretions from his kidneys scanty.

On examination there was slight puffing about the eyelids, and œdema at and about the ankles.

Ordered to be taken home at once; to have a hot bath and eight grains of compound jalap powder, with five grains of nitrate of potash, every four hours.

I saw him next morning; he was quite dropsical; urine scanty, tea-coloured; bowels had acted freely; skin moist. Ordered powders to be continued, and one ounce of citrate of potash mixture after each powder.

January 12th.—Had an attack of convulsions this morning, and is now quite insensible; moans occasionally. The pupils are contracted; moves his limbs freely, but is quite unconscious. There is considerable difficulty in getting food into his mouth, but when it is got in, he swallows freely; urine passes involuntarily.

Ordered head to be shaved, and blister to poll; turpentine enema; jalap powders and potash mixture to be continued; to be supported with chicken broth, milk, &c.

He continued in this state for several days, with occasional attacks of epileptic convulsions, supported with chicken-broth, wine, and arrow-root; the citrate of potash mixture was continued; enemata administered every second day; two nurses were engaged, and he had every possible care and attention.

January 16th.—He lay in bed quite unconscious, his eyes half open and blood-shot, pupils somewhat dilated, squinting; moaning occasionally, with slight convulsive paroxysms; with a good deal of trouble support is got down; pulse slow and feeble; the surface of the body is warm; he moves his limbs freely; no paralysis.

This state of things continued until the 20th, when consciousness began to be restored; power over the bladder returned; the convulsive attacks ceased; he took food freely; urine copious, but loaded with blood.

January 24th.—He is now quite sensible; takes food freely; pulse feeble, "90;" urine copious, but still contains much blood; greatly emaciated; bowels acting, and quite under control. Ordered tincture of iron and nitric acid; to be supported freely.

From this to the 28th he improved rapidly, but required a large amount of support. On the morning of the 29th I found him sitting up in bed eating an egg; he had quite regained his strength, but the urine, although copious, was still albuminous and tea-coloured. I directed one jalap powder at night, the iron and acid to be continued. Up to this I had seen my little patient twice a day. This morning, seeing he was going on so well, I told his mother I would not see him until the next morning.

January 29th, evening.—In the course of the day I received a note stating he was not so well. On my arrival I found him quite unconscious, and perfectly hemiplegic; the surface of his body was warm, but no appearance of congestion. On raising the eyelids, the pupils were dilated, and the muscles of the face at the left side were distorted; his mouth was opened with difficulty, and he swallowed very badly. Ordered turpentine enema, mustard stupes to the feet, to be repeated every four hours, blister to the poll, to be supported freely with milk and barley-water.

January 30th.—Somewhat more conscious, but does not recognize any-one; bowels acted freely; urine passes away in drops; swallows fluids when got into his mouth; a large blister to be applied to the vertex.

January 31st.—Continues to improve, but recognizes no one; opens his mouth, but cannot put out his tongue; urine still passes away in drops; I had some collected, it was loaded with blood; takes support freely.

February 1st.—Still more conscious; he is quite hemiplegic at right side, face, tongue, arm, and leg. The urine passes away in drops; with difficulty he can be kept dry, of which he does not appear to be in the least conscious. After this day he continued to improve, acquiring power first over the tongue, then the leg.

On the 10th of February, for the first time, he recognized and called me by name.

On the 14th, the power over the bladder was complete, and he regained strength with great rapidity; the urine is copious, albuminous, but no appearance of blood; specific gravity 1015.

March 9th.—He is amusing himself in the nursery, and grown quite stout; the right arm is still feeble, and fingers slightly contracted; the face still slightly dragged, but he improves day by day. The urine is normal. He has been taking iron and nitric acid.

*On the Employment by the Ancients of the Vapour of Sulphur as a Disinfecting and Curative Agent.* By JOHN POPHAM, M.A., M.B.; Dub. and Cantab.

As a kind of appendage to the interesting and practical remarks made by Dr. Cummins upon the use of sulphurous acid for the prevention and cure of certain zymotic diseases, I beg to subjoin a few extracts, rather hastily selected from the writings of the older classic authors, in proof of the very high estimation in which sulphur was held, more especially for disinfecting purposes—from an early period of civilization. It received its Greek appellation of θειον, divine, not improbably from its lustral uses in religious ceremonies, or, as others think, from the sulphureous vapours emitted in places where lightning had committed ravages; leading to the old opinion that sulphureous combustion was intimately connected with the phenomena of that element.[a] In the 16th book of Iliad, we meet with a distinct allusion to the properties of sulphur as a *deodorizing* sub-stance. When Achilles brought out from its cabinet the golden beaker, from which no one was allowed to drink, and out of which he used to pour libations to Zeus alone of the gods, he purified the vessel first by fumigation with sulphur, and then rinsed it in flowing water.[b]

[a] "Quid quod omnibus fulguritis odor sulphureus est." Seneca Nat. Qu. 2, 21.
[b] Iliad, xvi., 225.

"He took a most unvalued bowl, in which none drank but he—
Nor he, but to the deities, nor any deity
But Jove himself was served with that ; and that he first did cleanse
With sulphur, then with fluences of sweetest water rense."

<div align="right">CHAPMAN.</div>

"It is well known," says Van Swieten in his quotation of the passage, "that air long pent-up causes vessels to retain an unwholesome and musty odour, and that it was to remove this the fumigation was employed."[a]   A still stronger recognition of the purificatory virtues of sulphur occurs in the Odyssey.   After the slaughter of the suitors of Penelope, when their dead bodies had been removed, and the blood carefully sponged away from the reeking floors, Ulysses called for sulphur to purge the halls.[b]

"Οἶσε Θέειον γρηῦ, κακῶν ἄκος, οἶσε δὲ μοι πῦρ
Οφρα θεειώσω μεγαρον."

"Bring sulphur straight, and fire, the monarch cries,
She hears, and at the word obedient flies.
With fire and sulphur, cure of noxious fumes,
He purged the walls and blood-polluted rooms."—POPE.

This process was the περιθυμιασις, that is, fumigation carried about from chamber to chamber, in order to correct the contaminated state of the air within them, and in the present instance, to destroy the effluvia from the dead bodies.   The great importance attributed to this ceremony can be gathered from tne peremptoriness with which Ulysses insists upon its immediate performance, not even staying, though he was urged, to change his clothes, lest danger from pestilence may arise.   We have good reason to conclude that amongst the ancients there was latent beneath the cover of religious customs the serious intent to preserve bodily health, and the more completely to insure the latter object, the former was put forward ostensibly.   Thus Ovid, treating in his Fasti of the religious usages of the time, observes :—" Our seniors thought that purgations could take away all guilt and all the causes of evils.   It was Greece that originated the custom.   Greece inculcated that the guilty and impure could, by lustration, put away from them their impious deeds."[c]   Hence religious purification was adumbrated by the various means of promoting cleanliness of person, and hence the connexion which was early discovered between putrefactive decomposition and pestilential diseases, and which led to the empirical burning of sulphur " as a remedy of ills."   This, apparently a piacular rite, was found to be a real specific against their diffusion.

There is a reasonable degree of probability that the colytic virtues of

[a] Commentar. in Boerh., Tom ii., p. 126.
[b] Odyss., xxii., 526.
[c] Fastorum lib. ii., 37.

sulphur were not unknown to the Jews. Fire and brimstone are found in the scriptures frequently associated. We may observe, in passing, that the Saxon word " brimstone " has been invariably employed by the translators of the bible in place of the Latin word " sulphur." The destructive effects of sulphureous fumes upon vegetable life, or as we say in modern phrase, upon the vitality of organic germs, were well known to the Jews. " When the generation to come . . . see . . . that the whole land thereof is brimstone and salt and burning, that it is not sown—nor beareth—nor any grass groweth thereon,"[a] &c. It is not unlikely that the Jews made use of sulphur for preventing disease. It was their custom to throw the carcases of their unburied dead into the valley of Hinnom, or Tophet, and it became necessary to burn large fires there, so as to consume the animal remains, and prevent pestilence. That brimstone was used on these occasions seems deducible from the words, "The pile is fire and much wood, and the breath of the Lord, like a stream of brimstone, doth kindle it."[b] I shall only mention one other passage from the book of Job, in which the speaker declares that as regards the wicked, " brimstone shall be scattered upon his habitation,"[c] which has been explained to mean that when the wicked man should be driven from his house, it should be held to be unclean, and to require purification by sulphur to become habitable. Fumigation by sulphur was supposed to drive away demons from houses.

Amongst the Roman authors we find the testimony of its use becoming more decided. Pliny speaks of the wonderful nature of sulphur " quo plurima domantur."[d] He mentions sulphureous vapours as a means of testing epilepsy, " tanta vis est ut morbos comitiales deprehendat nidore, impositum igni." Epileptics cannot stand it, as it at once determines a fit. He also alludes to the frequent employment of its lurid flame for magic rites, of which we have many examples. In epizootic diseases the vapour of sulphur was much used, as it has been by the moderns lately in the cattle-plague, the spread of which Dr. Dewar found it useful to prevent. In the Fasti of Ovid it is much recommended in the diseases of sheep.[e]

> " Cœrulei fiant vivo de sulfure fumi
> Tactaque fumanti sulfure balet ovis."

This bluish smoke-like vapour of burning sulphur was directed to be applied by contact to the diseased sheep. In the sheep-pestilence described by Virgil in the third Georgic, the " sulfur vivum " was proposed amongst other remedies.[f]

[a] Deut. 29, 23.
[b] Is. xxx., 33.
[c] Job, xviii., 15.
[d] Plinii Nat. His., lib. xxv., ch. 50.
[e] Fast, lib. iv., 739.
[f] Georgii, lib. iii , 449.

As a means of purification the fumes of lighted sulphur were much in use amongst the Romans.   Not only were houses fumigated, but also house furniture, especially bedding.

> " Et veniat quæ lustret anus *lectumque* locumque
>     Præferat et tremula sulphur et ova manu."—DE ARTE AM.

Even wearing apparel was subjected to sulphur vapours, and on occasion men themselves were obliged to undergo it as a means of expiation.—Thus Propertius

> "Imperat et totas iterum mutare lacernas
>     Terque meum tetigit sulfuris igne caput."—LIB. iv., 9.

and Juvenal

> " Cuperent lustrari si qua darentur."
>     Sulphura cum tedis."—SAT. ii., 157.

The preceding passages show sufficiently the habit of the Romans, of burning sulphur, both as a purifying agent and an effective instrument in preventing disease.

The curative powers of sulphurous acid, when inhaled, have been lately much spoken of in various affections of the throat and lungs.   Dr. Dewar has advised its use in phthisis, and explains its mode of action in that disease upon the hypothesis, that phthisis is caused by parasitic cryptogams, to the development of which sulphurous acid is deadly. Without venturing to give any opinion upon the theory, which is modern, we may say of the practice, that it is in a measure ancient.   Avicenna speaks of sulphur inhalation as of use in checking coryza, "restringit coryzam suffumigatio."   Dioscorides represents it as beneficial in hoarseness, purulent expectoration, and asthma, both when taken internally, and also by inhalation or suffumigation, $\dot{v}\pi o\theta v\mu\iota\omega\mu\epsilon\nu o\nu$.   Both he and Pliny testify to its power of curing the bites of venomous animals, such as the scorpion.

When we add to the preceding uses of sulphur in the fuming state, its good effects in rheumatic and renal diseases, and in skin affections, such as vitiligo, we can judge of the high appreciation in which it was held by the ancients.

It is probable that modern physicians do not do full justice to this remedy, and that, comparatively speaking, it has fallen into unmerited disuse.   There are symptoms now of its coming into estimation again. The celebrated Von Swieten was enthusiastic upon its merits.   " Not without reason, he says, " have men at the very summit of the profession wondered how in this soft and insipid substance, such singular properties lie concealed, for the very worst poisons are subdued by sulphur alone." He describes its power of bridling the toxic effects of arsenic, antimony, and mercury, when blended with them.   He notices also the power of sulphurous acid in checking fermentation, a fact believed to be of

recent discovery, and on which Professor Polli of Milan grounded his theory of giving the sulphites in zymotic diseases. He also points out its power of resisting putrefaction,—" Accensi sulfuris vapor omnem fermentationem præcavet, vel natam jam suffocat atque omni putredini quam maxime resistit." No testimony to its value can go beyond this. Van Swieten cautions us justly against its careless use, and mentions the liability of it to cause spasm of the glottis, pneumonia and permanent emphysema, if incautiously inhaled.

We learn from Dioscorides that the mode of inhaling the vapour of sulphur, and other volatile substances, was by a siphon. It is not unlikely that its use in magic rites for producing certain effects upon the brain, when blended, as in the Ciris of Virgil 370, with aromatic herbs, may have led to its similar administration in medicine. The ancient magicians well studied the art of producing, at will, light and airy visions, or heavy and terrifying impressions by different forms of fumigation.

# CLINICAL RECORDS.

*Hospital Notes.* By T. H. Babington, M.D., T.C.D.; M.R.I.A.; Surgeon Londonderry County Infirmary.

## LONDONDERRY CITY AND COUNTY INFIRMARY, AND CITY FEVER HOSPITAL.

### REPORT FOR THE YEAR 1868.

*Numerical Return of Patients Admitted into and Treated in the City and County Londonderry Infirmary for the Year 1868.*

| | | |
|---|---|---|
| Patients Remaining 31st December, 1867, - - 65 | | |
| Admitted, - - - - - - - - 620——685 | | |
| Discharged Cured and Relieved, - - - - 593 | | |
| ,, Died, - - - - - - - 40——633 | | |
| Remaining 1st January, 1869, - - - - - 52 | | |

#### *City Fever Hospital Report for 1868.*

| | | |
|---|---|---|
| Patients Remaining 31st December, 1867, - - 6 | | |
| Admitted, - - - - - - - - 90—— 96 | | |
| Discharged Cured, - - - - - - - 82 | | |
| Died, - - - - - - - - - 10——— 92 | | |
| Remaining 1st January, 1869, - - - - 4 | | |
| Number of Beds in Hospital, - Males, 48 ; Females, 24—Total, 72 | | |
| Number of Beds in Fever Hospital, - - 20 ; ,, 12— ,, 32 | | |
| Total number of days passed by Patients in Hospital, - - 19,951 | | |
| ,, ,, ,, in Fever Hospital, - 2,082 | | |

*Numerical Abstract of Cases of Accidents and Diseases, for the Year* 1868.

| ACCIDENTS. | NO. | ACCIDENTS. | NO. |
|---|---|---|---|
| Bite of Dog, | 3 | Fractures of Leg, | 9 |
| Burns and Scalds, | 11 | ,, Thigh, | 3 |
| Dislocations of Elbow, | 1 | ,, Ribs, | 2 |
| ,, Hip, | 2 | Injuries of Head, | 3 |
| ,, Shoulder, | 6 | ,, Spine, | 1 |
| ,, Thumb, | 3 | General Injuries, Wounds, and Con- | |
| Fractures of Arm, | 18 | tusions, | 87 |
| ,, Clavicle, | 5 | Drowning, | 2 |
| ,, Lower Jaw, | 1 | | |

| DISEASES. | NO. | DISEASES. | NO. |
|---|---|---|---|
| Aneurism, | 1 | Diseases of Skin, | 35 |
| Anthrax, | 2 | Erysipelas, | 2 |
| Abscess, | 20 | Hernia, | 11 |
| Cancer, | 11 | Rheumatism, | 29 |
| Drunkenness, | 5 | Scrofula, | 6 |
| Dropsy, | 11 | Tumours, | 3 |
| Diseases of Brain, &c., | 9 | Whitlow, | 2 |
| ,, Bones and Joints, | 23 | Ulcers, | 35 |
| ,, Eyes and Ears, | 14 | Tetanus, | 1 |
| ,, Heart, | 14 | Other Diseases, | 44 |
| ,, Lungs, &c., | 88 | Fever, | 90 |
| ,, Stomach, Bowels, &c., | 59 | Diseases of Urinary Organs, | 38 |

*Accidents and Diseases which proved fatal.*

| | NO. | | NO. |
|---|---|---|---|
| Accidents { Burns and Scalds, | 2 | Disease of Heart, | 4 |
| Injury to Spine, | 1 | Cancer of Stomach, | 1 |
| Gun-shot Wounds, | 1 | Diarrhea, | 1 |
| General Injuries, &c., | 2 | Enteritis, | 1 |
| Albuminuria, | 2 | Fever, | 10 |
| Aneurism, | 1 | Pneumonia, | 2 |
| Bronchitis, | 4 | Phthisis, | 13 |
| Disease of Brain, | 1 | Syphilis, | 1 |
| ,, Bone, | 2 | Suppression of Urine, | 1 |

| | £ | s. | d. |
|---|---|---|---|
| Average Cost of Hospital and Fever Patients, including all expenses, | 2 | 11 | 9 |
| Average Cost of Hospital and Fever Patients, exclusive of all Salaries, Wages, and Annuities, amounting to £568 10s. 5d., | 1 | 17 | 2¼ |
| Daily Cost of each Patient, including all expenses, | 0 | 1 | 10 |
| Daily Cost of each Patient, exclusive of Salaries, Wages, and Annuity, amounting to £568 10s. 5d., | 0 | 1 | 3¾ |

*Burns and Scalds* in a surgical hospital too often hold a prominent place—always troublesome, frequently dangerous and fatal. Two fatal cases came under observation ; one lived seventeen hours from the occurrence of the accident. A man employed in a distillery dropped a bag into a boiling keive, and stepped in after it ; he was picked out scalded as far as the pelvis. He was brought at once to hospital, but never rallied from the shock. In the second fatal case the injuries were more extensive—legs, abdomen, arms, thorax, and face, all scalded by the bursting of a steam boiler in a mill. He survived about thirty hours.

*One of the Dislocations of the Hip* was into the foramen ovale, readily

reduced by Sir Astley Cooper's directions, delineated in the plate in his work on fractures and dislocations. (*Quarto edition*).

*A Dislocation of Shoulder* was one of rare occurrence ; the head of the humerus was lodged on the dorsum of the scapula.

*All the Fractures of the Leg and Thigh* were treated on the straight position, and the most simple appliances used to keep the limb in position, viz., a posterior splint, two chaff bags, and two side splints properly adjusted, and a foot board when necessary. Fractures of the thigh invariably treated with Liston's splint, or a slight modification thereof. I have never used a double-inclined plane.

*One Fatal Case of Injury of Spine* came under observation. A man aged 50, intoxicated, fell out of a cart, and (as was stated) the wheel passed over his neck. He was immediately brought to hospital, perfectly sensible, but powerless. He could not use his arms or legs, and was totally deprived of sensation from an inch below the clavicle. His breathing was abdominal. He died next morning, seventeen hours from the occurrence of the accident. The temperature of this man's skin was normal, and his pulse never above 58. *Post mortem* examination disclosed a fracture of fourth cervical vertebra. This case is mentioned not for any particular interest that the case affords, but I noticed in the *Dublin Medical Press and Circular* of March 3rd that at the meeting of the Surgical Society on the previous week a case of injury of the spine was brought under the notice of the society by Dr. Hamilton, of Steevens' Hospital, in which case the injury was of a similar nature, and the fracture was in same situation (fourth cervical vertebra). In Dr. Hamilton's case the temperature appears to have been greatly increased, so high as 106. On reading this case I called to mind a fatal case of fracture of spine which came under my care in Colerane Union Workhouse in 1849. A bricklayer building a tall chimney fell from top to bottom. He was completely paralysed, and could only move his head slightly ; insensible from clavicles down ; respiration abdominal ; retention of urine. The accident happened on Friday, the 12th of October ; on Monday the 15th large dark vesicles appeared on the soles and sides of his feet ; on the 17th his urine became amoniacal, and bedsores commenced on Friday the 19th. He began to sink gradually, and died on Sunday night, the 21st, ninth day from the accident. Twelve hours before death his body became icy cold, his pulse fell to 36 in the minute, and the number of his respirations were eight in the minute. On *post mortem* examination there was a fracture through the body and transverse processes of the fourth cervical vertebra. I believe the preparation is in the Royal College of Surgeons' museum. It was placed there by my respected friend and former preceptor Dr. Hargrave, Professor of Surgery in the College.

*In General Wounds, Contusions, and Gunshot Wounds* three cases proved

fatal. The first fell out of a window in a pork-curing establishment ; at once brought to hospital ; senseless from concussion of the brain ; compound fracture of left arm, simple fracture of right arm ; severe contusion of left knee. I cannot describe the storm (I say surgical storm) through which this poor fellow passed. Wild delirium, irritative fever, rigors, suppurations, abscesses, vomiting, diarrhea, bedsores, wasting, and death on the sixty-fifth day from the accident. Truly Mr. Travers in his graphic work on constitutional irritation well described such cases.

The second case, one of incised wound into the bursa, above the patella, from which there was great hemorrhage, arrested by accupressure. This case terminated as the former. Their progress was too slow to call such cases pyemia. I am inclined to say they died from surgical fever, or constitutional irritation, and after much protracted suffering.

In the fatal case of gunshot wound, death was caused by mortification speedily following the injury.

*Aneurism* proved fatal by the bursting of the sac (aneurism of arteria innominata) into the œsophagus. The clavicle and portion of sternum were greatly eroded.

*Cancer.* — Eleven cases came under observation. One breast was removed, and so far is going on well, and that is all I can say in regard to ultimate success of operating for the scirrhus breasts. A fatal case of cancer of pylorus came under observation. I have preserved the stomach and parts, and the size to which the stomach was dilated and extended is almost incredible.

*Phthisis*, as usual, was very fatal.

*Syphilis* fatal in one case.

*Suppression of Urine*, noted as fatal, is not a delineation of the case. The patient was admitted into hospital late on Sunday evening. Stated she had not passed urine for four days. She complained of much pain. Every examination failed to detect any urine in the bladder. The vagina, rectum, and adjacent parts were a conglomerated mass of hard, unimpressible, non-elastic tissue. She died next evening under all the symptoms of urœmic poisoning. The *post mortem* examination revealed that the uterus and all its appurtenances were a hard, infiltrated, degenerated, scirrhus mass, filling up the lower part of the pelvis, and blocking up the ureters.

*Hernia.*—Eleven cases came under observation; nine were supplied with trusses. One incarcerated was treated with warm bath and large doses of opium. The tumour disappeared in the night. The patient was treated with Wutzer's apparatus, and with a most successful result. The eleventh case had strangulated hernia, complicated with hydrocele. The fluid having been evacuated, the operation was performed. The patient recovered perfectly after a severe attack of peritonitis, and several abscesses about the inguinal region and scrotum.

In operations on strangulated hernia I feel rather indifferent about an early fecal evacuation. I consider a grain of opium every fourth hour highly preferable to any purgative.

*In the Cases of Acute Rheumatism* I am led to place confidence in the alkaline treatment, sometimes accompanied with small blisters on the affected joints.

*Tetanus.*—An idiopathic case, caused by exposure to wet and cold. Nicotine was administered, but even in minute doses had to be given up, owing to the frightful depression it caused. Tincture of Indian hemp and Battley's sedative liquor of opium were freely administered with plenty of nutritious food, and liberal supplies of wine, under which treatment the patient (a boy aged 12) recovered.

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*On the Relation between Typhoid Fever and the Height of the Underground Water;* (from various papers in the Zeitschrift f. Biologie.) Translated from the *Ugeskrift for Læger,* Copenhagen, January 30, 1869; by WILLIAM DANIEL MOORE, M.D., Dub. et Cantab.; M.R.I.A., L.K.Q.C.P.I.; Honorary Fellow of the Royal Medical Society of Copenhagen.

WE gave in a former number of the "Ugeskrift"[a] an abstract of an essay in the "Zeitschrift für Biologie" by Buhl, in which that writer endeavoured to demonstrate, with respect to Munich, a decided connexion between the variations which in a long period had taken place in the mortality from Typhus,[b] and the height of the underground water. It will be remembered that he based his results upon the dissections performed by him in the General Hospital, whereby he not only attained to an absolutely certain diagnosis, but at the same time was in a position, from the condition of the intestinal ulcers to fix the date of the occurrence of the disease. We shall briefly recapitulate the most important results he arrived at:—

1. The variation which takes place in the mortality from typhus in Munich, necessitates the assumption of a cöoperating cause, sometimes assisting, sometimes counteracting the specific cause of typhoid fever, and which must be considered as its quantitative side, as the basis of the extension and force of the disease.

2. Of all elements in Munich accessible to investigation, the oscillations in the underground water especially exhibit relations, unmistakably indicating their connexion with the spread and violence of typhoid fever.

3. So long as the underground water continues to rise, the number of fatal cases of typhoid fever steadily falls, and *vice versâ.*

[a] 3rd Series, Vol. iv., p. 41.

[b] The sequel will show that it is to the ileo- or abdominal typhus, or typhoid fever, exclusively, that the writer refers in this paper.—*Translator.*

4. The duration and rapidity of movements in the underground water, contain the measure of the violence and extension of typhoid fever.

The line upon which Buhl has here entered, has been received very differently, though most frequently with a certain reservation, and in Munich itself not merely with mistrust, but even with dislike. Nevertheless he has also met with important support from various scientific men,—a support which every subject deserves which, like this, is closely connected with the public weal. Thus Seidel has in two papers in the "Zeitschrift f. Biologie"[a] subjected the coincidence between the numbers of typhus cases and the varying height of the underground water in Munich to an accurate mathematical investigation, based on the principles of the doctrine of chances. He has in this manner arrived at essentially the same results as Buhl:—

1. The variation in the number of the cases of typhus compared with the variation of the underground water, indicates, after elimination of the period of the year, a coincidence, whence with a probability of 36,000 to 1 a connexion between the two phenomena is deducible.

2. All the investigations show, that when in Munich a month presents a greater rainfall than the normal according to the season, it will also be more probable that we shall find in it a diminution of the number of cases of typhoid fever than an increase.

3. If we would suppose the phenomena mentioned (the variation of the underground water and the number of typhus cases) to be dependent on a third unknown phenomenon, the height of the underground water, the quantity of the meteoric rainfall and the frequency of the cases of typhoid fever must be at the same time dependent thereon, and be brought into a certain agreement. Now as this cannot be the influence of the seasons, which is everywhere eliminated, no other plausible explanation remains but this, that under the local circumstances existing in Munich the water contained in the soil, when it is present in sufficient quantity, hinders or limits certain processes, whereon the frequency of the cases of typhus depends.

4. It is further evident, that these processes take place in the soil itself. Thus that an increase of the atmospheric rainfall exercises a favourable influence by saturating the porous earth with moisture, and not by a direct operation of the weather on the system, must necessarily follow from the facts, that this operation can be shown to extend even through months, and that the higher position of the underground water is in and by itself, accompanied by an equally favourable, or even still more evident action.

Willars Jessen[b] of Kiel has subjected Buhl's numbers to a similar

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[a] 1 Bd., p. 221 and 2 B., p. 145.
[b] "Zeitschrift für Biologie," iii., p. 128.

mathematical test,—only he employed another method of calculation ; he has arrived at the same result as Seidel.

Thomas of Leipsic[a] tested Buhl's and Seidel's proposition with reference to the monthly mortality from typhus in Munich and found it quite confirmed.

In the first number of the fourth volume of the " Zeitschrift für Biologie," Max Pettenkofer has laid hold of the question partly to oppose the objections expressed both privately and publicly against the propositions laid down by Buhl and Seidel, partly to direct attention to and to explain a chart constructed by " Polizeiingenieur" Wagus from the lists supplied by all physicians.  This chart, in addition to other satistics of mortality in Munich, gives also the mortality from typhus for each month in the period from 1850 to 1867.  Moreover he has given in curves the monthly rainfall, and, since March, 1856, at the same time the height of the underground water according to Pettenkofer's observations.  It will be remembered that Buhl has treated only of the period 1856-64, while Wagus takes in both the time before (1850-56), and the time after Buhl's observations, namely, from 1864 to the close of 1867.  We are thus in a position to try, whether the results deduced by Buhl and Seidel from their materials up to 1864, hold good also in the following period. This is in fact the case ; there is a strict agreement between the curves constructed by Buhl and Wagus, not merely so far as the great epidemics are concerned, but also with reference to the yearly and monthly mean mortality of typhoid fever, the greatest mortality being found in both in February, and the least in October.  The result shows at the same time, that Buhl was justified in looking upon the mortality in the general hospital as a type of that in all Munich.  That it is not upon the season that the varying mortality of typhus depends, appears also from Wagus' chart ; thus for example in January, 1858, the deaths from typhoid fever were 97 ; and in January, 1867, they were 10.

We are naturally embarrassed in seeking the cause of this varying mortality in typhoid fever.  The causes generally assigned in daily life and in practice, as bad food, errors in diet, cold, want of cleanliness, damp and insufficient ventilation of rooms, &c., do not explain why in January, 1858, so many, and in January, 1867, so few died of typhoid fever.  All these conditions, which are all mentioned by Buhl, have certainly a hygienic signification both for the particular individual and for the course of an epidemic ; but they are not liable to such changes as the extension and violence of the typhoid fever, which therefore cannot be dependent on them ; they indicate no causal connexion with the flow or ebb of the specific course of typhus which is still unknown to us, and the existence of which is assumed only from its effects.

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[a] " Archiv der Heilkunde," vii., p. 385.

If we compare on Wagus' chart the curve, indicating the mortality from typhus, with that exhibiting the yearly rainfall, we observe a coincidence resembling that which Seidel has demonstrated, the one curve ascending when the other falls, and *vice versâ*. This is, however, far from being invariable,—it presents considerable exceptions. But it appears that we might assume as a rule, which in every case holds far better than any of those previously admitted, that an increase of the atmospheric rainfall is attended with a diminution in the number of typhus cases. But now in Munich in the years 1856-'57-'58, the rainfall was about the same, namely, 282, 312, and 306 Parisian lines. If the rainfall in and by itself had any influence, we might in these years expect about the same number of typhus cases; but this is far from being the case; from November, 1857, until May, 1858, the most severe typhus epidemic of all raged in Munich.

We might also assume that it was the rainfall of the preceding year which was the agent, and that therefore the most severe epidemics of typhoid fever might follow the driest years. 1856 and 1865 were the two driest years, with respectively 282 and 255 Parisian lines of rain; the first year was followed by a much slighter epidemic than the second, which therefore seems to agree with what has been assumed. But from 1856-57 the rainfall rises from 282 to 312 lines, and nevertheless the most severe epidemic of all now ensues, even far surpassing that from 1865 and 1866, which yet followed the driest year of all with only 255 lines of rainfall. All these facts have likewise been all quoted and investigated by Buhl; but Pettenkofer has detailed them at greater length, for which reason we have introduced them, notwithstanding the repetition.

Pettenkofer now comes at last to the underground water, as the atmospheric rainfall cannot, without the aid of it, which indeed ultimately depends thereon, be brought into any true connexion with the epidemics. This underground water seems, however, to have caused people some trouble notwithstanding Pettenkofer's accurate definition, and many will always see something mysterious in it. The underground water is a definite state of moisture in the porous soil; where the pores in such a soil are filled partly with air, partly with water, Pettenkofer calls the soil damp; when the pores in a layer of the soil are filled with water alone and all air is expelled, underground water is present. The state of the underground water is therefore a kind of standard, so to speak a zero, for the moisture of the ground, and the rising and falling of this standard, which takes place beneath the surface, is the subject of observations of the underground water.

From a hygienic point of view we are concerned only with the underground water found in the upper, porous layer of earth. Now where this porous layer is so deep, that all wells have their supply of water from it, the state of the water in the wells affords the measure of the height of the underground water. This holds good perfectly so far as

Munich is concerned; but in other places, where the nature of the soil is different, the state of things may also be quite different. Where for example there is a waterproof layer of marl or clay under a comparatively thin, porous layer, so that the former must be perforated before we meet with sufficient water, the state of the water in the wells of course cannot indicate the height of the underground water, which contribute only little or nothing to the supply of the wells. We must therefore accurately investigate the state of things in each individual place, if we wish by our measurements to obtain results of really scientific value.

Pettenkofer further shows, that the height of the underground water in different years and at different seasons does not depend directly on the yearly rainfall, and that the same rainfall may act quite differently in different localities, even with soil of the same nature. In this latter respect many elements have an influence: 1. The quantity of rain; 2. how much of the latter penetrates the earth or evaporates on the surface; 3. how much is retained by adhesion in the superior, dry layer or again evaporates; 4. how much flows to the locality on the waterproof substratum from higher points; and finally, 5. what fall has the waterproof stratum on which the water collects.

The first element, the rainfall, is the most important, but may be greatly modified by the others; when the layer lying over the underground water is very much dried up, it may rain for several weeks and the underground water may still continue to sink. If this layer, on the other hand, is already very damp, and the superficial evaporation be only very slight, almost every drop sinks down to the underground water.

Prof. Pfaff of Erlangen has for a year undertaken many instructive investigations respecting the penetration of the rainfall into the soil. He has shown of what great importance the depth or extent of the porous layer resting on the waterproof stratum is; that a porous layer four feet in depth, has a totally different signification from one of half a foot or a foot. These investigations will soon be published in the " Zeitschrift f. Biologie." Pfaff has found that of the summer half-year's rainfall only $7^\circ/_\circ$ penetrates down to the waterproof layer, when the porous layer is half a foot in thickness, while $37^\circ/_\circ$ does so, when that layer is four feet in thickness. This paradox is explained by the drying from superficial evaporation; the thicker layer receives during evaporation much water from below, and can therefore never be so much dried up that it can absorb the subsequent gradual rainfall so completely as the thin layer.

If we now inquire in the chart published by Wagus, when, on the whole, the lowest position of the underground water was observed in Munich, it appears at once, that this was contemporaneous with the most violent epidemic of typhoid fever in the period investigated, namely, 1857-58. The next lowest state of the underground water corresponds to the next most severe epidemic, 1865-66. And if we apply a counter-test and

inquire when the underground water stood highest, we find that it was in 1867, the very year in which we had the smallest number of typhus cases, namely 96, the lowest number observed in Munich since 1856, when the observations of the underground water commenced. Such a coincidence cannot possibly be attributed to mere chance.

The year 1867 shows also that we cannot from the rainfall directly deduce the height of the underground water. In 1866 374,''' and in 1867 406''' fell in Munich, and so early as April in the last named year the highest point of underground water was attained; but in 1859 392,''' and in 1860 416''' fell there, and it was not until July, 1861, that the highest point of the underground water was reached.

The chart, therefore, constructed by Wagus from entirely different materials, confirms in every respect the law previously indicated by Buhl and Seidel, and corroborated by Jessen and Thomas. And it at the same time shows very distinctly, that the atmospheric rainfall influences the cause of typhus only so far as it alters the height of the underground water, as also Seidel and Buhl have established.

To attain to perfect certainty it is however necessary that observations of the same nature as those carried out at Munich should be made also in other places visited by typhoid fever. Accurate statistics of typhoid fever, and in connexion therewith a continued investigation of the rainfall and heights of the underground water, are the requisites; and we see already from the facts obtained in Munich, that it is only through a period of several years that we can calculate on decisive results and on a discovery of the local rhythm. It is not to be expected that the results should everywhere be the same as in Munich. Thus much is however ascertained from other seats of typhus, that there also the severest epidemics in general follow the driest years. This was the case with the epidemic at Windsor, which became so notorious, in consequence of its having carried off the Prince Consort. The same has been reported to Pettenkofer respecting the frequently recurring epidemics of typhoid fever in Liverpool. Dr. Pfeiffer has communicated similar observations as to Thuringia, and Dr. Jürgensen has done the same for Kiel. The opposite has been reported for Königsberg, namely that typhoid fever is there most severe in damp years. If this be confirmed it ought not, thinks Pettenkofer, to be looked upon as contradictory to the result obtained from Munich. But he is of opinion that such cases may, on the contrary, forward the matter, inasmuch as they will lead to an explanation of the circumstances which are the same in both places, but which in Königsberg come into action when the underground water rises; in Munich on the contrary, when it falls.

Pettenkofer warns us especially against too hasty and precipitate conclusions, and recommends an accurate and careful investigation of the facts, before we look upon our results as certain. He likewise warns us

against the old mistake in medicine, of ascribing without inquiry the same disease now to one, and again to another cause, in one case blaming the soil and its humidity, in another cucumbers or brandy, or when no dietetic error is known, uncleanliness, poverty, or fear, in a word, assuming everything and therefore nothing, as essential. This method may indeed be convenient, especially in practice, when it can never lead us into embarrassment; but it is incompatible with the spirit of science; and if medicine is, and is to be a science, it must lay aside this habit, which has become a practice, not to say second nature; and we must say only :— "in such a case this has occurred instead of that," when we can really state how and why the one may produce the same effect as the other.

An accurate diagnosis is also necessary, as it is only ileo- or abdominal typhus which is in question, and not other diseases, unfortunately often confounded with it.

The theory of the underground water can, according to our present knowledge of facts, rest only on weak and arbitrary hypotheses. The underground water alone with its rising and falling can evidently not produce any disease,—it can in any case only conditionally affect their occurrence. Whether this alternation in the moist condition of the soil effects the formation of vegetable or animal organisms, putrefaction or depreciation of the water or of the air, is as yet undecided. Only thus much Pettenkofer believes may positively be admitted, that it is essentially an organic process, which goes on in the soil; but where in the soil these organic matters occur, and how the process goes on, remains to be investigated. That the process does not take place in the water itself is evident from the fact that this is the very thing which checks it, while drying up promotes it. It seems incomprehensible, how it can be asserted, that it is not the moisture in the soil, the underground water, but on the contrary the atmospheric moisture, the rain, which has an influence on typhoid fever and cholera, while we nevertheless may often see, how in one and the same town (for example Weimar), one part of the town is visited by typhoid, while the other parts are free, or, as in Nürnberg, the one side of the town is devastated by cholera, while in the other part only sporadic cases are met with. Are we really to believe, that more rain can fall in one part of the town than in the other?

Little admissible as is the assumption, that specific typhus is developed in the water, its reference to the surface is, according to Pettenkofer, equally inadmissible. If the theory that it is an organic process be correct, we cannot suppose, so far as Munich is concerned, that this takes place on the surface of the soil, for experience shows, that the severest epidemics have occurred precisely at the coldest season, when the earth has often been frozen for weeks consecutively. We cannot imagine any organic process which should be active in the middle of winter, in the

hardest frost. It will be necessary at least provisionally to place the focus of typhoid fever beneath the line of frost of the soil.

But if we place the seat of the formation of the typhus germ beneath the surface, we must also account for how it reaches us. Under ordinary circumstances we are connected with the underground layer only in two modes, namely, through the water in our wells and springs and through the air, which permeates the porous layer. Many look upon the former as the only probable mode, and this is Pettenkofer's view, and several well observed facts in the progress of cholera in England place it beyond all doubt, that the germs of these diseases may be disseminated through the water, though they are not developed therein; but for this a peculiar soil is required. The typhus-corpuscles formed in the porous, damp soil may also pass over into the underground water, and after being brought up to the surface through wells and springs, may be further developed and swallowed by us.

We know indeed, that the air above and beneath the surface of the earth may hold numerous organic germs floating in it, and carry them with itself though very narrow canals. Now if the air in the porous soil, and the open atmosphere be partly of a somewhat different composition, partly of a somewhat different temperature, the former will constantly mix with the latter, and they will thus be able to exchange matters.

Very few, however, have a correct idea of the porosity of the soil on which our dwellings stand, and of the motion of the air therein. If we strongly compress in a vessel, any quantity of the soil on which Munich stands, after having first dried it at 212° F., until no further diminution takes place, and then pour on water until all interstices are completely filled and all air driven out, the weight of the quantity of water used will indicate the degree of the porosity of the soil. With respect to Munich at least $\frac{1}{3}$ of the soil consists of pores or interstices, which are completely filled with air so long as the ground is dry; the buildings in Munich therefore rest on a soil of which at least one-third is atmospheric air. This to many will appear very strange, especially with respect to Munich, where one can work in the hard and firm crust of the earth only with pickaxes. But it will perhaps sound less incredible, when it is known, that a well burnt brick has $20°/_{0}$ of interstices, filled with air, and that one can blow through it. Now if we even look upon the soil as a kind of lid to what lies below it, we must not forget that this lid closes only two-thirds of the opening and leaves one-third free. We cannot therefore in fact wonder more that such germs as in general may be carried in the air, can reach the surface from considerable depths in the soil, than that the smuts from our lamps and candles which stand upon the table, should collect on the ceiling, or that we may meet with the mineral constituents of the soil in the top of a tree one hundred feet high.

Although the author, as has been stated, will not for the present deny,

that the cause of typhoid fever may be conveyed in water, especially in drinking water, he thinks that according to our present experience and the investigations which have been made we must look upon the air as the most usual and the most important medium of the communication of the typhus matter.   An attempt has been made to explain Buhl's observation, that a low state of the underground water promotes, while a high state of the same is unfavourable to the occurrence of typhoid fever, by supposing that under the former circumstance the wells should contain more impure water, while this more concentrated extract of the soil is diluted under the latter.   Plausible as this theory may at first sight appear, it has nevertheless very rarely proved correct.   Accurate investigations at different heights of the water in wells have shown, at least in Munich, that spring water in damp weather, that is when the underground water is high, contains a larger quantity of solid constituents than in dry weather.

Theories which point to a certain influence of the wells are readily entertained and supported, because the latter must be essentially affected by the nature of the surrounding soil.   Still in Munich we have never succeeded in demonstrating a positive influence of a particular kind of drinking water.   Thus there is still the same supply of water as during the violent typhus epidemic of 1865-66, and yet there is at present scarcely any typhoid fever ; in 1861 the drinking water was even much worse than in 1865-66, and yet there were then very few cases of typhoid fever.   The author therefore considers the question of the influence of drinking water to be still *subjudice*, and he recommends that more weighty proofs should be sought for in its favour, than have as yet been brought forward.

# MAURICE H. COLLIS, M.D., Dub.

### FELLOW AND EXAMINER IN SURGERY ROYAL COLLEGE OF SURGEONS; SURGEON TO THE MEATH HOSPITAL; PRESIDENT OF COUNCIL IRISH MEDICAL ASSOCIATION.

### DIED MARCH 28, 1869, AGED 45 YEARS.

THE death of Mr. Collis was so sudden and so totally unexpected, he was so well known and so highly esteemed both by the members of his own profession and by the public, that the melancholy event produced an almost unexampled sensation, and was immediately noticed not only in the weekly medical journals, but in the daily papers, and we have little doubt that everyone of our readers has already heard of it. A valued contributor both of original articles and of reviews to this Journal, we cannot allow him to pass from amongst us without a special notice.

Another in the long list of those who, within the past few years, have, in this city, fallen in the breach, cut down by disease contracted during their attendance on hospital patients, the tale of his professional life is soon told. The son of the Rev. Robert Collis, Rector of Kilconnell, in the diocese of Clonfert, he received his general education at the University of Dublin,[a] and having been apprenticed to his uncle, the late Mr. Maurice Collis, he carried off the Senior Surgical Prize at the Meath Hospital in 1846, and became a licentiate of the Royal College of Surgeons in 1847. From the outset he laboured assiduously to make himself an accomplished surgeon in the only way in which an accomplished surgeon can be made—acquiring the utmost familiarity with anatomical details, and the greatest readiness in the use of the knife, by spending years in the dissecting-room, first as a student, and subsequently as a demonstrator. After he had visited the medical schools of London and Paris, his uncle retired from the Meath Hospital in his favour, and in 1851 he was placed on its surgical staff. Availing himself to the utmost of the opportunities he thus enjoyed, identifying his own interests with those of the institution in which he

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[a] Those who were students in Trinity at this time will remember his poem, "Fabri Cassus," or "The Wrongs of Wright," a witty description of the misfortunes which overtook a college porter in his cups. The readiness in composition and literary power shown in this early effort was one of the most striking of Mr. Collis's talents.

laboured, he exerted himself to the utmost to perfect the hospital accommodation, and zealously discharged his duty both to the patients and to the pupils. Seeking the ambitious position of a consulting and operating surgeon at a time when many senior men of European reputation were still in full vigour in this city, the most brilliant qualities could hardly have secured immediate success; but honest work, if life is spared, brings its reward sooner or later, and for the past few years Mr. Collis's position as a surgical authority was becoming steadily established, and he was beginning to reap fully the material rewards of his industry, when it pleased Him who orders all things aright that he should rest from his labours.

His work on "The Diagnosis and Treatment of Cancer, and Tumours analogous thereto," is a standard book; and, besides very frequent contributions to the surgical and pathological societies, he published in this Journal most valuable articles on the various congenital deformities of the mouth, on the treatment of anthrax, and on the subject to which he had lately devoted special attention—operations upon the upper jaw.

In the circumstances of Mr. Collis's death we have a melancholy illustration of the imminent risk to which the members of our profession expose themselves who continue to follow their avocations when failing health renders them specially liable to suffer from the animal poisons with which they unavoidably come in contact. Beyond suffering at times from rather troublesome dyspepsia, his health was good up to the beginning of the past winter; during it, however, he had a succession of catarrhal attacks, in which the lining membrane of the trachea appeared to suffer most, as he had frequent hoarseness, and sometimes loss of voice. He felt that his health was precarious, and expressed to one of his friends his determination not to work so hard. Since Christmas he had cough. At first, taken up with his professional cares, he paid no attention to it, but early in March, alarmed by its persistency, he had his chest examined. The existence of plastic bronchitis being suspected, he noticed the expectoration, and found that it contained branched casts of the tubes. On this discovery he submitted himself to a very mild mercurial course; but in spite of the advice of his professional friends, continued to attend his hospital and his private patients.

On the evening of Friday, March the 19th, he was present at a meeting of the Surgical Society, but looked ill. On Monday, the 22nd, he operated for the removal of a malignant growth

connected with the superior maxilla. Towards the end of the operation he took the knife in his left hand, which he used with great readiness, and while holding a portion of the mass in his right he wounded slightly one of the fingers of that hand. He was noticed to be unusually fatigued after the operation, and in the afternoon expressed his fear that he had got some poisonous matter into the wound. On Tuesday he saw his patients as usual, but while at dinner had a slight shivering. Thinking this might be the commencement of some febrile attack, he remained at home on Wednesday. Between three and four on Thursday morning sudden alarm was created, as he was heard coughing as if choking. In a few minutes he was seen by one of his medical friends, who found his face rather pale, his eyes suffused, the surface of the body pungently hot, and the pulse very rapid; he seemed quite unconscious. With difficulty he was made to swallow a little brandy and water, while the application of ammonia to the nape of the neck, roused him somewhat. Early in the morning he was seen by the eminent physicians, who were his colleagues in the Meath Hospital, together with Mr. Porter and Dr. Jameson. It was then ascertained that during Tuesday, and still more during Wednesday, he had complained of pain about the right shoulder. On examination, a barely appreciable fulness was noticed posteriorly between the scapula and the spine, and here there was a very indistinct emphysematous crackling. When roused by speaking, and begged to tell if he was suffering anywhere, he pointed to the right axilla, where, as well as in the infra-axillary portion of the chest wall, as compared with the corresponding regions on the left side, there appeared to be some fulness; but no approach to definite swelling, no redness nor trace of inflamed lymphatic could be discovered. The small cut was visible in the pulp of the finger, but surrounding it was no inflammatory change. A large poultice was applied behind the shoulder and in the axilla; bark and chlorate of potass were administered, and beef-tea and Madeira freely given. During the day his aspect was that of a person over whom the stupor of a fever was deepening. He hardly spoke, and gave little aid when it was necessary to alter his position, while during the early part of the night there was considerable excitement.

On Friday he showed occasionally a consciousness of the nature of his illness, remarking at one time that the cut was a little one, but there was blood poisoning. He spoke little, intimating his wants by gestures. He was evidently thirsty, but the tongue was

moist and clean. The pulse was 120, more feeble than on the previous day. The respirations had increased in frequency. The temperature was 105° Faht. The urine, which was abundant, had a density of 1020, was loaded with lithates, and distinctly albuminous. He took readily his beef-tea and Madeira, and boluses of quinine and camphor. About seven in the evening he had a violent trembling, but without any fall of temperature; indeed, judged roughly by the hand, the surface felt more pungently hot than it had previously done. As the trembling seized him he pressed his left hand to the root of his neck, on the right side, and exclaimed that it had gone above his clavicle, it had gone into his neck. In this situation there was now appreciable but quite undefined fulness. The night was restless; for the most part he noticed little what was passing, at times, however, he seemed clearer, and on one occasion asked a pupil, who was unremitting in his attention to him, how was the patient on whom he had operated, and whether the plugs had been removed.

On Saturday morning the voice, which had all along been feeble, was completely lost.[a] He had a good deal of cough, and brought up some rusty expectoration. Respiration had become laboured and frequent, and dulness on percussion and tubular breathing were found over the right lung behind. The pulse had increased in frequency, but fallen in strength. The temperature of the body, though still above that of health, was less than on the previous day. The urine now contained a much larger quantity of albumen.

In the afternoon there was greatly-increased swelling, spreading over the neck and the front of the chest, and burying the clavicle; there was also an increased fulness at the inferior angle of the scapula. He intimated very plainly that he wished some attempt made to find matter, and though all were agreed that no evidence of fluid existed, after an anxious consultation, Mr. Porter, assisted

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[a] The explanation of the aphonia, which was very marked, is difficult. We are indebted to Dr. Arthur W. Foot for drawing our attention to an article by Dr. Ogle in the third volume of St. George's Hospital Reports, in which the frequent occurrence of loss of speech, after the bite of venomous snakes, is mentioned, and explained on the supposition that the poison produces spasm of the middle cerebral arteries. The explanation offered at the time by Dr. Stokes, that it was due to pressure on the pneumogastric, or its recurrent branch, by effusion, seems, in Mr. Collis's case, the more probable one, as it was noticed that several words were spoken distinctly immediately after he was turned completely on the left side ; but the restoration of speech was temporary, though during the remainder of his illness he uttered, evidently with extreme effort, a few words.

by Mr. Wharton, made an incision below the outer third of the clavicle, and carefully divided the structures till he reached the rib. Some bloody serum, but nothing else, escaped from the wound. An incision made at the inferior angle of the scapula gave no other result. The hand and forearm continued perfectly without trace of lymphatic swelling or inflammatory change. During the evening the gradually increasing respiratory distress, the falling temperature and failing pulse, indicated that from the ministrations of affection and the efforts of skill no aid could come to the sufferer, and he entered into his rest on Easter morning, the 28th of March.

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55. The British journal of homœopathy. April, 1869. London: Henry Turner and Co.

56. Remarks on Dr. Sayre's paper, entitled "A new operation for artificial hip-joint in bony anchylosis." By Louis Baner, M.D., of Brooklyn. New York: D. Appleton and Co. 1869. Pamphlet.

# PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

## GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review. Churchill.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by W. Braithwaite. Simpkin and Co.
4. The Half-yearly Abstract of the Medical Sciences. Churchill.
5. Pharmaceutical Journal. Churchill.
6. The Lancet.
7. The Medical Times and Gazette. Churchill.
8. The British Medical Journal.
9. The Asylum Journal of Mental Science. Churchill.
10. The Glasgow Medical Journal. Mackenzie.
11. The Athenæum.
12. The Dublin Medical Press.
13. The Westminster Review. Trübner.
14. Transactions of Obstetrical Society. London : Longmans.
15. Journal of Cutaneous Medicine and Diseases of the Skin. Edited by Erasmus Wilson, F.R.S. Churchill.
16. The Practitioner ; a Monthly Journal of Therapeutics. Macmillan and Co.
17. The Journal of Anatomy and Physiology. Macmillan.

## INDIA.

18. The Indian Annals of Medical Science. Calcutta: Lepage and Co.
19. Transactions of the Medical and Physical Society of Bombay.
20. The Madras Quarterly Journal of Medical Science. Madras: Gantz, Brothers.

## AUSTRALIA.

21. The Australian Medical Journal, Melbourne: Wilson and Mackinnon. London : H. Baillière.

## AMERICA.

22. The American Journal of the Medical Sciences. Edited by Isaac Hays, M.D. Philadelphia : Blanchard and Lea.
23. The American Journal of Science and Arts. Conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. New Haven.
24. The American Journal of Insanity, Utica, N.Y. State Lunatic Asylum.
25. The American Journal of Obstetrics

## AMERICA.—*Continued.*

and Diseases of Women and Childbed. New York : Moorhead, Bond, & Co.
26. The Cincinnati Lancet and Observer. Cincinnati.
27. Canada Medical Journal. Montreal : Dawson, Brothers.
28. The New York Medical Journal New York : Muller and Mathews.
29. The Philadelphia Medical and Surgical Reporter.
30. The Richmond and Louisville Medical Journal.
31. The Medical Record. New York : Wood & Co.
32. The New Orleans Journal of Medicine. Trübner.
33. The Western Journal of Medicine. Indianapolis, Ind., U.S.A. : Trübner.

## FRANCE.

34. Gazette Médicale de Paris. Paris.
35. Gazette Hebdomadaire de Médecine et de Chirurgie. Paris: Victor Masson.
36. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue denouvelles scientifiques, nationales et étrangeres, &c. Paris: Labé.
37. Journal de Médecine de L'Ouest. Nantes: Mellinet.
38. Journal de Pharmacie et de Chimie, &c. Paris: Victor Masson.
39. L'Union Médicale. Paris.
40. La Lancette Française, Gazette des Hôpitaux civils et militaires. Paris.
41. Revue Médicale Française et étrangère. Publié par le Docteur Sales-Girons, Paris.
42. Archives Générales de Médecine. Paris : Asselin.
43. Bulletin de l'Académie de Médecine. Paris: Baillière.
44. Mémoires de l'Académie de Médecine.
45. Revue de Thérapeutique Médico-Chirurgicale. Paris : Dr. A. Martin-Lauzer.
46. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecines. Par Lucas-Cham-pionnère. Paris.
47. Journal des Connaissances Médicales et Pharmaceutiques. Paris.
48. Annales Médico - Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Paris: V. Masson.

FRANCE.—*Continued.*

49. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Par le Docteur Debout. Paris.

50. Répertoire de Pharmacie. Par M. le Dr. Bouchardat.

51. Gazette Médicale de Strashourg.

52. Journal de Médecine de Bordeaux.

53. L'Union Médicale de la Gironde, Bordeaux.

54. Annales D'Hygiène Publique et de Médecine Légale. Paris.

55. Gazette Médicale de Lyon. Dirigée par le Dr. P. Diday.

56. Montpellier Médical Journal mensuel de Médicine. Montpellier: Boehm et Fils.

57. Journal de Médecine Mentale. Par M. Delasiauve. Paris: Masson et Fils.

58. Archives de Médecine Navale. Paris: Baillière.

59. Mémoires et Bulletin de l'Académie Royale de Médecine de Belgique, Brussels.

### BELGIUM.

60. Annales D'Oculistique. Brussels.

61. Annales et Bulletin de la Société de Médecine de Gand.

### GERMANY.

62. Zeitschrift für rationelle Medicin. Herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Heidelberg and Leipzig: C. F. Winter.

63. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Prague: Karn André.

64. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt Von Pr. Scherer, Pr. Virchów, und Dr. Eisenmann. Würzburg: Stahel.

65. Wochenblatt der Zeitschrift der k. Gesellschaft der Aerzte in Wein (Beilage zu den Jahrbüchern). Redigirt von A. Duchek, C. Langer, A. Schauenstein. Leipzig: Hinrichs.

66. Deulsches Archiv. für Klinische Medicin. Leipzig: Vogel.

### PRUSSIA.

67. Archiv für pathologische Anatomie und Physiologie, &c. Herausgegeben von R. Virchow. Berlin: G. Reimer.

68. Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medicin. Herausgegeben von Damerow, Flemming, Roller durch Heinrich Laehr. Berlin: Hirschwald.

69. Berliner Klinische Wochenschrift. Berlin: Hirschwald.

70. Archiv für Klinische Chirurgie Herausgegeben von Dr. B. von Langenbeck. Berlin: Hirschwald.

71. Monatsschrift für Geburstkunde und Frauenkrankheiten. Berlin: Hirschwald.

### HOLLAND.

72. Archiv für die Holländischen Beiträge zur Natur-und Heilkunde, Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam, Utrecht: C. Van Der Post.

### NORWAY.

73. Norsk Magazin, for Lægevidenskaben. Udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. A. W. Münster. Lund: Voss. Christiania: Feilberg and Landmark.

### SWEDEN.

74. Hygiea, Medicinsk och Farmaceutisk Manads-skrift. Stockholm.

### DENMARK.

75. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Literaturselskab. Redigeret af Dr. K. Brüniche. Copenhagen: Reitzels.

### ITALY.

76. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna.

77. Giornale Veneto di Scienze Mediche.

78. Lo Sperimentale Giornale Critico di Medicina e Chirurgia per servire ai Bisogni dell 'Arte Salutare. Direttore Prof. C. C. M. Bufalini. Florence.